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TRANSLATION FROM *Traite de la Fabrication du Fer*, BY M. B. VALERIUS. Published at Brussels, 1843.

Continued from page 721.

Section IV.—MANAGEMENT OF THE FURNACES.

Chapter 4.—*Gas Furnaces and Cannon Foundries.*

Page 192. *Object of the Chapter.*—In this chapter is given the translation of the unpublished memoir of M. Faber du Fauer upon the gas furnaces of his invention, and a description of the means employed to obtain in the cannon foundries cast iron of the greatest strength. The motives for publishing the paper of M. F. du F. were given in pp. 85 and 89. The other part of this chapter will not be found out of place in this work, when it is considered that gun metal should possess in the highest degree the properties desired in that employed in the principal machinery of a rolling mill; and the proofs to which it is subjected to ascertain its strength and durability, should serve for models and guides to the constructors and managers of iron works in their daily investigations of the qualities of wrought and cast iron.

For example, the secret of the manufacture of handsome boiler-plates consists in great measure in a proper choice of pig iron used in making the rolls. Moreover the re-melting of pig iron in reverberatory furnaces may be considered a partial refining, since the object is to modify the composition of the metal.

Still the reader may consider this chapter as not strictly within the plan laid down for the work.

ARTICLE 1.—GAS FURNACES.

193. *Gas Furnaces for Re-melting and Refining Pig Iron; their construction.*—Gas furnaces intended for melting and refining pig iron differ from the ordinary reverberatory furnace heated with solid fuel, in the absence of a grate, the small height of the chimney, and the great length of the passage that serves for the bridge. Another difference is, that the combustion is effected by means of a current of hot air under pressure. The air is heated in the same furnace to a temperature of 482° to 707° F.

Figures 6 and 7 represent a refinery furnace used at Wasseralfingen. The length of this furnace, including the binding plates, is 12 feet 8 inches, Wurtemburg measure.* Its width is 4 feet 8 inches, and its height 5 feet 5 inches. It is anchored and bound with cast iron plates like an ordinary reverberatory furnace. The walls are ten inches thick, and the whole furnace is built of fire brick.

The top of the roof is covered with sand and plaster. A gas box *a*, figs. 6, 7, 8 and 9, placed as shown in figs. 6 and 7, is built into the end of the furnace, and on the same inclination as the bridge passage, which falls two inches in three feet. The opening by which the gas passes into the furnace is 2 feet 6 inches long and 5 inches high. The hot air is delivered by six tweres. These enter the gas box by an opening 2 feet 2 inches long, and 3 inches high. The gas enters the box at *t*; the extremity of the box *g*, is closed by a boiler plate cover, which can be removed when the box needs cleaning.

The furnace is built on a foundation of common brick a foot and a half high. The bridge, which occupies the place of the grate, is three feet long from the box to the furnace bottom, and 2 feet 6 in. wide from side-wall to side-wall, which is the width of the furnace. From the top of the bridge to the roof is 5 inches. The bottom is 4 feet 8 inches long, 2 feet 6 inches wide. It is inclined one inch toward the tap hole, *w*, fig. 6, which is 10 inches from the flue bridge. From the tap hole to the flue bridge the bottom rises half an inch. In addition to this, the bottom has a transverse inclination toward the door, to facilitate the flow of the refined metal in tapping the furnace. The bottom is 2½ to 3 inches lower than the fire bridge. It is made of fire brick placed on edge and set with as close a joint as possible. The bricks and mortar are composed of two thirds burned fire clay, and one third not burned.—The brick work is all grouted and pointed with mortar.

The tap hole is one and a half inches wide in the furnace, and two inches near the exterior of the furnace. The passage has a fall of 3 inches. The flue bridge is 6 inches above the bottom; it has the same width as the furnace, and its distance from the roof is 2½ inches. It is 1 foot 6 inches across, and slopes in this distance 4 inches. The flue leads into a chamber, which is 2 feet 7 inches long, 1 foot 3 inches wide, and 2½ feet high, which serves both for a chimney and for the preparative heating stove.

In the upper part of this chamber 2 feet 1 inch from the bottom, is placed a square cast iron box for heating the blast. This box is 2 feet 8 inches long, outside measures, and its sides are 1 inch thick. The bottom and sides are cast in one piece with lugs, to which the top is bolted fast. Through the middle of this box, fig. 10, is a passage 1 foot 8 in. long by 4 inches wide, which forms a part of the base of the chimney. In the interior of the box at one corner is a partition cast with the bottom and sides, which forces the air to go all around the box before escaping.

The cold air is conducted to this box by a round cast iron pipe 2 inches in diameter inside, with a cock to regulate the quantity admitted. A pipe of the same size is screwed to the hole in the top of the semi-circular box, *b*, fig. 8. This is fastened to the box, *a*, by screw bolts, and has an opening 2 feet 3 inches long by 3 inches high. Between the sides of the box, *a*, and the flange by which *b* is bolted to it, is placed a sheet of strong boiler plate iron, armed with six tweres of the same material, luted with fire clay. These tweres go through the box *a*, and extend beyond it about one inch. The pressure of the cold air in the regulator is equal to a column of wa-

* The Wurtemburg foot is divided into 10 inches, and these into ten parts. It is to the English foot as 2865 : 3048, these numbers being the length of each in parts of a metre.

Puddling with Gas from the Blast Furnace.

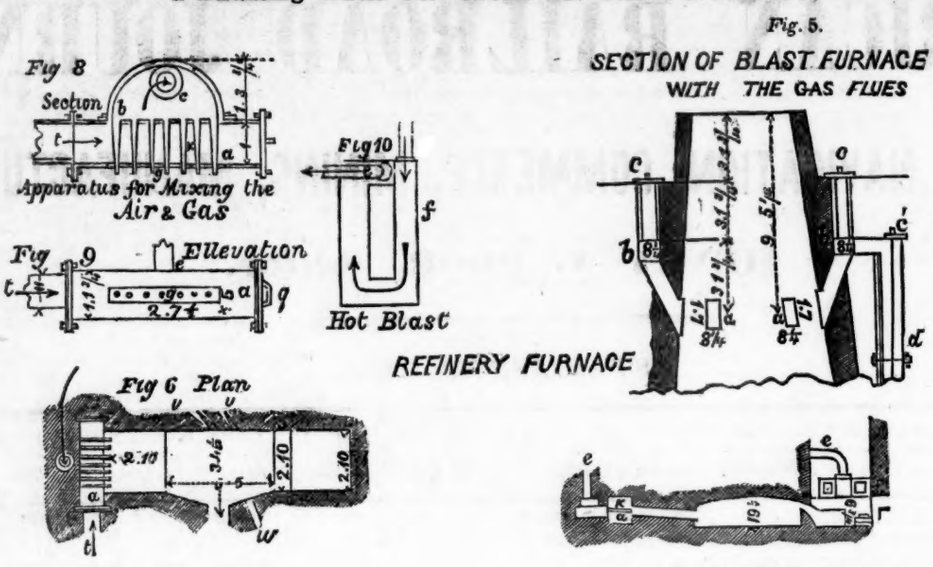


Fig. 7. Section.

Figures 5, 6 and 7, one-hundredth the real size. Figs. 8, 9 and 10, one-fiftieth the real size.

ter from 15 to 18 inches in height. The pressure in the box, *b*, is less by 4 or 5 lines, because the six tweres offer a larger passage to the air than the pipe *c*.

The tweres, *v*, fig. 6, are inclined about 45° to the horizon. Their distance from the bottom of the furnace is about 6 inches. They are from 6 to 9 lines in area at the nozzel, and 2 inches at the larger end and 5 to 6 inches long, made of fire clay. They are connected with the pipe, which supplies the blast furnace, by a pipe 2 inches inside diameter, in which is a cock. This pipe divides near the furnace into two branches, 1½ inches diameter each. The air is discharged from these pipes under a pressure equal to a column of water from 13 to 14 inches high. A greater pressure would be advantageous.

The door for charging and working the furnace is 1 foot wide and 8 inches high, and is placed as usual in the middle of the front side of the furnace, and lifted as usual by a lever and counterpoise.—The bush of the door is 4 inches square. It is closed by a stopper of clay with a hole in the centre, 1 inch in diameter.

This furnace will refine 14½ to 17 tons per week: and costs with everything complete, such as tweres, tools, etc., $312 for cast and wrought iron work, and $209 for all other materials and labor.

194. *Process of Refining.*—In order to start a refinery furnace for the first time, a small quantity of gas and of hot air is admitted; the gas is lighted by a brand put into the furnace through the charging door. A small flame is maintained for about 12 hours; at the end of this time the quantity of gas and hot air is increased, which increases the flame, and so on until the furnace reaches a high red heat. The tap hole is then closed with sand, and from 800 to 1000 lbs. of pig iron charged. At the expiration of 1½ to 2 hours, or rather when this charge is melted and shows great fluidity, the cinder which covers the surface is skimmed off, and the materials employed to accelerate the refining are thrown in, and the blast through the tweres *vv*, is put on.

The materials used to accelerate the refining are, pure and rich iron ore, scales from the hammers, pure refinery cinder, powdered per-oxide of manganese, etc. They may be used alone or mixed: they are thrown in in small doses, and the quantity varied according to the nature of the iron under treatment.

From time to time trial is made to ascertain whether the iron is sufficiently refined; for which and the tapping of the furnace, see p. 131. A charge is refined in 1½ to 5 hours, according to the quality and quantity of the metal, and according to the degree of decarburation desired. The loss is from 2 to 4 per cent.

I have already remarked, p. 132, that refining in a reverberatory furnace, deprives the iron of a portion of its sulphur; this arises from the fact, that in a reverberatory furnace the iron is not in immediate contact with the fuel, as is the case in the ordinary finery.

The temperature of the gas furnace has been determined by repeatedly pouring the melted iron into a vessel of water, of which the quantity and temperature are known. The calculation is made from the following formula—$a\,b\,x = (b' + b''\,a)\,(t' - t)$, in which

a = the specific caloric of iron = ·11.
b = the weight of the iron.
b' = the weight of the water in the vessel.
b'' = the weight of the vessel of cast iron.
t = the temperature of the water before the iron is poured in.
t' = the temperature of the water after the iron is poured in.
x = the temperature of the iron when poured, and from which x = 2467° Reaum. = 3084° Centegrade, = 5583° Fahrenheit.

The temperature of charcoal blast furnaces, in good running condition, has been determined after the same method to be 2218° Reaum. = 2774° Centegrade, = 5025° Fahr. (See pp. 10 and 86.)

The product of the furnace when melting and refining "*brocaille*" only, amounts to 32,000 lbs. (14½ tons) per week. If the liquid iron from the blast furnace were conveyed immediately into the refinery, and the treatment limited to a simple refining of the crude iron, it would yield 64,000 lbs. (29 tons) per week.

A furnace refining 14½ tons a week requires three refiners and three helpers. The refiners get each 42 cents a day; the helpers 21 cts. each; which makes the labor cost 92 cents per ton.

195. *Gas Furnaces for Puddling.—Construction.*—The puddling furnaces are very similar to the refinery furnace just described. The principal differences are in the form and size of the bottom, in the number of tweres used in burning the gas, and in the absence of the lateral tweres, through which a jet of hot air is thrown upon the melted iron in the refinery furnace.

The rectangular cast iron box, in which the gas is received from the blast furnace, is 12 inches wide and 9 high. The air necessary for the combustion of the gas is delivered into the furnace by seven tweres, which pass through the gas box and extend about an inch beyond it; their shape and dimensions are the same as of those in the refinery furnace. The bridge is 5½ feet wide across the furnace, and 2 feet 6½ inches lengthwise of the furnace, and 5 inches from the roof. The bottom is 58 inches long; its greatest width is 3½ feet, which is narrowed to 2 feet 6½ inches at each end. The bottom is of cast iron, 8 feet 4 inches long, 4 feet wide and 2 inches thick. In the middle of this plate, which is cast in one piece, is a hole or space 3 feet 2 inches long and 2 feet wide, into which a separate plate is fitted, which may be renewed from time to time without disturbing the other plate or the brick work. The greatest distance from the roof to the iron bottom is 17 inches in the middle, 12 inches near the bridge, and 13 inches near the flue. The working bottom is made of cinder, 3 inches in thickness.

The flue is 18 inches long, 2 feet 6½ inches wide, and falls in this distance 5 inches to the stove for preparative heating of the charge.

These furnaces have water boshes around the bottom, but of inferior construction to that described p. 105. The stove is like that of the refinery furnace. The door is cast iron, 1 foot 4 inches wide, and 1 foot high. The cost of a gas puddling furnace is—for iron $483; for other materials and labor $238 = $721.

196. *Method of Working.*—The filling up is the

same as in the refinery furnace. Nothing is easier than to vary the heat to suit the different stages of the process, as is practised in the ordinary puddling furnace, opening or closing of the registers being all that is required. But M. F. du F. does not follow this practise. He advises the employment of the maximum heat throughout the whole operation.—The amount of hot air should be so regulated that an excess of gas shall always be present in the furnace, otherwise the flame would become oxidating, and the loss would be too great. The flame coming from the chimney indicates whether the proper am't of air is admitted. The same precaution should be observed for every kind of blast furnace, whether for puddling, refining or heating, unless it is desired to oxidate the metal, as is sometimes done with very bad qualities of pig iron.

After having heated the charge in the stove from 30 minutes to an hour, it is removed into the furnace. The pieces of refined metal, being 10 or 12 inches square, are placed on edge along the back wall of the furnace from the bridge to the flue. A bed of rich cinder, obtained from the shingling of the preceding loups, is then spread over the bottom of the furnace, more especially near the charging door, which is then closed. After about three quarters of an hour, when the iron approaches a white heat, the pieces are turned, which operation is repeated, until they are all uniformly heated. The workman then endeavors to divide the iron with a paddle, taking care not to leave any of the metal attached to the side walls or bottom of the furnace.—After this the iron melts and the cinder rises, and then he works with all his might to mix the whole mass thoroughly. After some minutes the iron begins to solidify, and to rise in clots to the surface of the cinder, which is called "coming to nature."—The endeavor of the workman is to work the iron as quickly as possible, and to reduce it to small lumps, which is necessary to refine it quickly and thoroughly. He stirs the iron from the bridge towards the the flue, and vice versa, so that there is always one half of the furnace bottom nearly bare, which becomes properly heated before it is again covered with iron. When the iron is refined it is made into six or eight balls.

During the working of the heat a small jet of air is thrown against the flame, that comes out of the bush of the working door, to set it back and prevent its burning the workman. The labor of puddling is easier than by any other method of firing.

If any portion of the bottom has melted, it is covered with cold cinder, which is melted, and the next heat then charged with cinder as before described. The cinder bottom is renewed, which may be necessary every two to four months, as follows:—The old bottom is all taken out, the furnace is then fired up, and brought nearly to a white heat. Refinery cinder well broken and cleaned is then spread all over the bottom to a depth of one and a half inches; the heat is then increased, and the cinder perfectly melted. A second portion of cinder is then added and melted, but not allowed to become so fluid as the other. Lastly a third portion is added and melted to the consistency of a thick paste. The inequalities are then levelled down with a peel, and the furnace allowed to cool off. It is necessary to take good care of the cinder bottom, and to watch that the iron bottom does not become red hot. If this should happen, it may be corrected by placing a vessel filled with water under it; the evaporation will keep the plates cool. The best weight to charge is found to be 310 lbs. of plate metal and 52 lbs. of mottled pig. Each heat requires about two hours' work. The loss does not exceed two per cent. A furnace will make from 9½ to 11½ tons of blooms per week.

Trials made on the plan already described give the temperature in the furnace at 2153° Reaum. = 2692° Cente. = 4879° Fahr.

The furnace is manned as follows—

1 master puddler who receives	84	cts.	per day.
3 helpers, each	63	"	"
3 men, "	42	"	"
3 " "	33	"	"
3 " "	21	"	"

This comprises the men at the hammer and generally all the men, who work for the furnace. The labor amounts to $33 86 per week = $3 56 per ton of iron made.

197. *Gas Furnaces for Heating.—Construction.*—These furnaces very much resemble the refinery furnaces already described. The width of the bridge, bottom and flue is 2 feet 5 inches, as in the refinery furnace. From the bridge to the roof, under the key brick, is 5 inches. The length of the bridge is 3 feet 6 inches; that of the bottom 4 feet 8 inches; and of the flue 1 foot 3 inches. The distance from the roof to the bottom is from 7 to 8 inches. Height of the flue 2 inches. All the other dimensions are the same as in the refinery furnace. The bottom is made with mortar of raw and burned fire clay mixed. If the bottom wants repairs while the furnace is working, it is done with fire brick pounded to the size of a walnut and cinder. Near the flue is an opening for the flow of the cinder which forms during the heating. The cost of a heating furnace is, for cast and wrought iron work $247 38, and all other materials and labor $172 62 = $420.

198. *Working of the Furnace.*—The furnace is lighted and brought to a white heat as explained in the account of the refinery furnace. The iron to be charged is then plunged into a thin grout of clay and pulverised cinder, put into the stove, dried and brought to a red heat. It is then charged into the furnace—care being taken that the blooms do not touch each other. When they are heated on one side they are turned, and when they attain an uniform and proper heat, they are drawn. A charge is from 4 to 6 cwt. Half an hour is sufficient to heat them. It is well to keep a bed of fluid cinder in the furnace from 1 to 2 inches thick, by which means the loss is lessened. Should it exceed 2 inches in depth, the furnace should be tapped. A bottom will last from 5 to 8 heats. The loss is from 10 to 12 per cent. The quantity heated per week is about 14½ tons. The temperature, by experiments made at Wasseralfingen is 2480° Reaum. = 3100° Cente. = 6852° Fahr. The furnace is manned by four men, two of whom are paid 42 cents each, and the other two 21 cents each, which is equivalent to 85 cents per ton of iron.

MEMPHIS CONVENTION.

ADDRESS OF LIEUT. MAURY.

Gentlemen—I am under obligations which I cannot express for the honor doae me. I am sensible that I am more indebted to your kindness than to any fitness on my own part, for the distinguished position to which you have called me. I must beg that you will let your charity be as broad as your kindness, and with it cover up all my short comings.

For what have we here assembled? It is because the country in its upward and onward progrsss has arrived at that stage from which increased facilities of communication between the Atlantic and Pacific oceans are required for the great purposes of State. Why am I, an officer of the navy, here present to take part in your deliberations? It is because the people of this great valley, without distinction of party, have assembled here in the persons of their representatives, to deliberate on measures of national defence. It is well known that the acquisition of California was regarded with no favorable eye by that power, "the sound of whose morning drum encircles the earth, and upon whose flag the sun never sets"—and that in case of a war with that power, should a war unfortunately ever occur, her first effort would be against California. And the only means by which its possessions can be rendered secure in such an emergency, is by the construction of a railroad from some point in this valley to those shores, over which troups and materials can be transported with facility.

In consequence of the use of railroads and other improvements and inventions of the age, the whole system of national defence as hitherto pursued by this government, has been brought to a stand still.—The item in the annual navy appropriation bill for the gradual increase of the navy, and on which many millions of dollars have been expended, has ceased to find a place in the navy estimates, because the inventions and improvements to which I have alluded, have exploded the plan of increasing the navy according to our former notions. For the same reasons the construction of railroads along the Atlantic seaboard has, in a great measure, put an end to the drafts upon the treasury for lining the coast with forts and castles. In contemplating the changes which the introduction of steam on the ocean and of railroads on the land will make in the system of warfare, we, as military men, are almost ready to exclaim with the Moor in the play, "Othello's occupation 's gone." In the first war, in which this country shall be required to put forth her energies, it will be found that railroads are the strongest fortifications, and the magnetic telegraph the most powerful battery that has ever been brought into play in military operations. By treaty with Mexico this nation is bound to prevent Indian depredations upon that country, and this great national railway to the Pacific would greatly facilitate the government of the United States in preserving the public faith as pledged by treaty stipulation, We build fortifications, and they remain mere piles of stones and mortar, of which the public can make no practical use until we are overtaken by the emergencies of war. And what, though this railroad to the Pacific in time of peace, should be of great advantage in promoting the welfare of the Union, in subserving the interests of commerce, and in advancing the prosperity of the people, should it on this account be regarded the less as a fortification?

Gentlemen have assembled here to consider of this measure with a single eye to the good of the country, of the whole country, and nothing but the country; party spirit, sectional feeling and local prejudice, I am assured from the character of the delegates here present, are to have no part in the proceedings of this convention. We are not in possession of information sufficient to justify us in saying at present where the railroad shall begin, what route it shall take, or where it shall end. We want it to take the best route that full and complete examinations and surveys shall point out. We want it to begin and we want it to end at those points which shall be found most convenient for the great national objects and ends for which it shall be constructed. If after such examinations and explorations it shall be found that St. Louis is the best point for the eastern terminus, let it begin there—if Memphis let it begin here—or if at any other point between the two, or any other point north or south of both, in the name of the people of the United States, and in consideration of their national destinies, there let it begin.

It has been urged as an objection to this railroad that it cannot support itself. Pray does the navy support itself? Do our fortifications support themselves and make dividends? Where is the work connected with the national defences of these United States that supports itself or makes dividends? If those who take this view expect dividends of cent per cent, wrung from passengers and merchandise to be transported over this national work, I hope it never will make dividends. It will bring forth fruit far more valuable than it is possible for the largest dividends ever to be. It will be to the immense region of country between this and the Pacific ocean what the Mississippi is to this valley. It will spread out its branches to the North and the South. It will enrich the people and increase the capacities of the country to sustain population, and it will give to this government the power to tax and to raise revenue from the wealth, and from that increased popula-

tion and its posterity forever. These are some of the peaceful fruits—*dividends* it you please—of this great national defence.

The articles besides troops and munitions of war which are to be transported over this road, are that class known in railroad tariffs as the light and bulky, or the more valuable articles of merchandise. We may expect branch roads to be built by private enterprise from it into Northern Mexico, and they will extend down into the heart of the country until the expense of transportation by the iron horse from the north, shall meet on equal terms with the cargoes brought over the mountains on the backs of mules and asses from the ports of Mexico. All the Mexicans above this line will be supplied with foreign merchandise over this railway. They will amount to several millions of dollars; and this country will have the monopoly of that commerce. We may expect each Mexican to consume of the goods of Lowell and other "Yankee nations," at the least, two or three dollars per head; and we shall receive and return therefor the produce of the Mexican mines But there are other articles of commerce—such as the great agricultural products of this country, which cannot afford to pay the expenses of transportation from one end of this road to the other. I have examined the tariffs of freights on merchandise as per fifty odd railroads in this country. Merchandise is divided generally by them into three classes. The first class consists of those heavy articles, such as coal and iron, which require the rudest open cars for transportation, which do not require houses for storage, and which are not liable to loss or injury by weather on the road.

The second class consists of such articles as grain, provisions, &c.; and the third class consists of light and bulky articles, which are charged by measurement and not by weight, and which consists of the most valuable articles of commerce, such as cloths and manufactured goods. The average rate of freight charged by these fifteen odd roads on the first and cheapest class of these articles is four and a half cents per ton per mile, and the average rate on the third and dearest class is eight cents per ton per mile. Now suppose that we take but one third from the cheapest class, and say that this railroad which has no dividends to make, can afford to carry all articles of merchandise at the rate of three cents per ton per mile, the distance of the length of the road by an air line will be about 1500 nautical miles, which increased by necessary *detour*, would give us the length of the road say 2000 statute miles, which at three cents per ton per mile, would require a toll of $6 per ton from one end of the road to the other. I appeal them to the gentlemen present from Illinois, Missouri, Ohio, Kentucky, Tennessee and the Southern States, and ask if their hemp, their wheat or their flour, their pork and beef, their tobacco or corn, their cotton, their sugar or their rice, if any one of these articles can afford to pay $60 per ton as a part of the expenses only of finding a market among the six hundred millions of people who inhabit the counties washed by the Pacific? To find a market there for any one of these articles requires the construction of a commercial thoroughfare across the isthmus which joins the two Americas.—It can be shown that all these articles can pay the expenses of a sea voyage to the Isthmus of Panama, and a toll of ten cents per ton per mile to a railroad there, and be delivered in the markets of Peru is less than one third the time, and at one half the cost that it now takes by the way of Cape Horn.

Let us for a moment consider the commercial advantages which we derive from the course of our rivers and from the geographical position of that wonderful ocean basin, which is composed of the Gulf of Mexico and the Carribean sea. They are in truth the Mediterranean of the New World. A river which runs north or south crosses parellels of latitude and consequently passes through various climates; therefore a variety of productions is to be found along its banks, and assortments of produce are delivered at its mouth, to be borne across the ocean by the wings of commerce. The Mississippi river crosses more parallels of latitude than any river in the world, and therefore we find in its valleys a greater variety of agricultural staples than on the banks of any other river. We have wheat and corn, hemp and tobacco, provisions, cotton, sugar and rice, with a vast variety of articles of minor importance. A river which runs east or west crosses no parallels of latitude; the same climate which exists at its mouth is found at its source, and there is no variety of agricultural productions along its banks. In this fact we see one of the great sources of commerce and wealth afforded by the Mississippi river. A sea commercially speaking, is important in proportion to the extent and climate of the back country by which it is drained. And in this point of view, there is no part of the wide ocean which is comparable to this Mediterranean sea in our midst. It is midway between North and South America; rivers that run from the northern and southern hemisphere empty into it; in their course they cross seventy degrees of latitude, and embrace all the agricultural climates of the world. The back country, drained by these rivers, is greater in extent than all the back country that is drained into the Mediterranean of the old world, added to all the country which is drained from Europe into the Atlantic, and all that is drained from India into the Indian ocean. There, their rivers, are all in the same hemisphere, and they have but one harvest in the year. Here our rivers rise in both hemispheres, and we may have a harvest every six months. There they have to sail 20,000 miles to exchange the products of the river basin for those of another in a different climate. Here we can do it within a distance of 2,000 miles. There, it is as much as a ship can do to make one voyage in a year between their remote river basins. In the same time here, one ship may make ten voyages between our remote river basins.

What is it that has caused the nations of Europe to attach so much value and importance to the commerce of the Indies? It is because the river basins there, lie in latitudes which are not found in Europe, and which therefore supply commerce with staples that are not produced there. All the supplies that are to be found in the basins of Europe and of India, with the exception of mere spices, abound in far greater profusion in the magnificent system of the New World. As before stated, this Mediterranean sea is midway between the two Americas; only give us therefore, a commercial highway across this Isthmus, and we make it the commercial centre of the earth. It will then srand midway between Europe and Asia.

As surely as a railway is constructed across the Isthmus, so surely will it lead to the construction of a ship canal. For experience will prove that all the railways that can be constructed aarose the Isthmuses of Panama and Tehuantepec will be incapable of transporting the merchandise which will seek a transit there. With a ship canal, a vessel may sail from Liverpool, to New York, or Charleston, or New Orleans, and entering the trades, may with fair winds and flowing sheets sail the world around and accomplish the voyage in much less time than it is possible to do. Such a commercial thoroughfare will place the Atlantic and the Gulf part of the United States on the way side of commerce, and in the great avenues of trade; and on the return voyage from India, the ports of California will be the half way house.

Owing to the course which the winds made it necessary for vessels to pursue, Great Britain is nearer than we are by ten days' sail and upwards, to all the foreign markets of the world, except those of the Gulf of Mexico and the Caribbean Sea; notwithstanding this advantage, we, by our superior energy as ship builders and ship sailors, have been coming up with her hand over fist, and the commercial race has now become neck and neck. She is a throat-latch ahead. Only give us this highway across the Isthmus, and we shall turn the corner and at a single bound come out a clear full length a head. England will be distanced, and will then remain forever under the Yankee stern. A demand for goods takes place in the markets of China—advices are brought over in thirty days by the line of steamers that assume to run between California and that Empire—the magnetic telegraph takes up the intelligence and instantly delivers it at the Atlantic ports and on board the steamer bound for Europe. While that steamer is on the way, the American merchant ships the goods, sends the invoice with the intelligence across the railroad to California, there it is delivered to the mail steamer bound for China, and in a few days reaches his eastern agent.

In the mean time his ship is running down the trades at the rate of eight miles the hour, passes through the Isthmus canal, and reaches her destination thirty, forty or fifty days before the Englishman can arrive there. Thus we shall have the control of the market for a month before any other nation can send its ships to compete with us. Do you want any greater advantage? Great Britain is aware of this. She well understands the advantages over us which she now enjoys in the voyage around either of the capes. In proof of this I have but to call your attention to the fact that although Great Britain has been making attempt after attempt to discover a northwest passage, and in her efforts has expended life and money without stint, yet she has never once entertained the idea of opening a commercial highway across the Isthmus. She has striven against hope to find a northwest passage, for should a practicable one be discovered there, it would then give her the advantages which a route across the Isthmus would give us. To illustrate the feeling of the English people on this subject, I may be excused for mentioning a circumstance which has come indirectly to my knowledge, and which is this—You, gentlemen, will recollect that the right of way across the Isthmus which has been granted by New Grenada, was first given to a company of Frenchmen. They sent an agent to London to solicit subscriptions to their stock. The reply of the English capitalists was, "No!" "Why?" "Because a commercial thoroughfare across that Isthmus will put the Americans on the wayside of the great channels of trade, and will give advantages over us under which there will be no longer competition between us and them." It was then proposed to incorporate a feature in their charter by which double tolls could be exacted on all American merchandise. With that drawback they were afraid to enter the list there with us.

I regard the route across the Isthmus of Panama as the link which is required to make complete the great railway chain from the valley to the Pacific Ocean. It is near the great circle route from the western coast of South America to China. It will bring all the travel between those shores to California and China through this valley and across that railway. It will bring New Orleans as near to the markets of six millions of people in Perú and other Spanish American States, as New York now is to those of the Mediterranean.

In contemplating the commercial advantages of this Mediterranean Sea of ours, and in attempting to draw a picture of the elements of power and greatness which are entered there, the brain becomes bewildered, and the mind dazzled with the immensity of the prospect.

Lieut. Maury was applauded throughout his speech, and sat down amid the tumultuous cheers of the audience.

COAL MINE IN RHODE ISLAND.

The Bristol Phenix reports that a vein of anthracite coal of good quality has been discovered in that town convenient to several manufacturing establishments operated by steam. The discovery was made by Messrs. O. M. Dimon & Co. in digging a well for the supply of water to a new sugar refinery in Thomas street. The following is the account given by the Phenix of the discovery—

About 14 feet below the surface, they struck a bed of coal, and have continued their operation to about 9 feet lower and find as yet no signs of reaching the bottom of the ledge. We are aware how much is usually said on making discoveries of this kind, above what results prove to be real; and therefore we mean to express ourselves with all due caution. As to the quality of the coal that has been thrown out, we think there can be no mistake. It has been tested by some dozen of our citizens and found to burn freely in close stoves. It leaves no cinders, and deposits ashes of a greyish color. The mine having but just been opened, it has been visted as yet by no scientific miner. This will soon be done, and the extent of its locality explored. There is every indicat on that we have struck upon a bed extending almost indifinitely to the North and the South, and which lies near the surface. It would be premature to suffer our thoughts and our pen to take wing as to what may be the results of this providential discovery. That we may have found coal good for all manufactory purposes, promising abundance and easy access, in the heart of our town—at the ve-

ry door of the steam engine, there can be no rational doubt. And there we leave the subject for the present in the hands of the operators and such professional men as may be tempted to test the locality, promising our readers that in due time they shall hear from us again, when future developments will authorize us to speak

Since the above was in type, several lumps weighing from 300 to 500 pounds have being taken from the well, and the quality is considered to be equal to the coal from Pennsylvania.

State Tariff Convention.

At one o'clock, P.M., the convention was called to order by Col. Joseph Jackson, of Morris, who nominated Peter Cooper, Esq. of the Trenton Iron Company as President of the convention; which nomination was unanimously concurred in, and Mr. Cooper took his seat in the Chair.

Col. Joseph Jackson, of Morris, William P. Robertson, Esq., of Warren, and Thomas H. Richards, Esq., of Burlington, were then appointnd Vice Presidents.

Messrs. William Green, Jr. of Morris, and Abraham S. Hewitt, of Trenton, were appointed Secretaries.

Messrs. Edward Post, of Sussex, William Green. Jr., of Morris, Peter M. Ryerson, of Passaic, Thos, H. Richards, of Burlington, Charles Scranton, of Warren, and Abraham S. Hewitt, of Mercer, were appointed a committee on resolutions.

On motion of Mr. Edwin Post, the convention then adjourned till 3 o'clock, P.M.

Three o'clock—the convention re-assembled.

Mr. Post, from the committee to draft resolutions, reported the following:

Resolved, That it is the deliberate sense of this convention, composed of men of all parties, and from all sections of the State, that the tariff of 1816 has now had a fair trial, and that while some of its features are unobjectionable, its operation has been very injudicions to all the great manufacturing interests of the state; and the agricultural classes, in the absense of European famine, have found the uncertain foreign demand a most meagre substitute for the steady cash market at home.

Resolved, That the next Congress of the United States will be called upon to decide a question of great magnitude to New Jersey; whether the tariff shall be modified in some of its most objectionable features, or whether the manufactories of this State shall remain closed, and the most serious injury be done to all its branches of protective industry.

Resolved, Therefore, that it is the solemn and paramount duty of the members of Congress from this State to urge as the united voice of New Jersey such modifications of the tariff as shall again put our machinery in motion, and afford full and profitable employment to the operatives who are now idle, and a home market for the surplus produce of the farmer.

Resolved, That we do not recommend an indiscrimiuate and hasty repeal of the tariff of 1846, but that our members of Congress are as much bound to contend for such of its provisions as may have been found to operate advantageously as against those which have paralyzed the strong arm of labor.

Resolved, That we do not ask for such duties as shall prohibit the introduction of foreign merchandise—but such rates merely as will enable us to enter into fair competition with foreign manufacturers, without reducing the wages of our operatives to the European standard; and that we are then ready for the contest between American industry, skill and enterprise, based upon well paid, intelligent labor against superior European capital, working with half-fed and half clothed operatives, ignorant of the true value of their toil, because they have never received its just reward.

Resolved, That a com. of corres. consisting of five members, be appointed by the chair, whose duty it shall be, to set forth the issue between the modification of the tariff, and the permanent suspension of our manufacturing establishments—with power to add to their number for the purpose of circulating petitions, praying Congress for suitable immediate action in the premises; for collecting information and statistics in regard to the industrial interests of the State; and that they cause the same to be laid before Congress at the earliest practicable period, at its next session.

Resolved, That Messrs. Wm. P. Robertson, Adam Lee, Peter Cooper, and Edwin Post, be appointed delegates on behalf of the State of New Jersey to attend the Tariff Convention to be held at Pittsburg, on the 21st inst., and that they have power to add to their number, and appoint substitutes in case of their inability to attend.

On motion of Mr. Post, the resolutions were considered separately, and after some discussion by Messrs. Hewitt, Jackson, Perdicaris and the President, were unanimously adopted.

The Chairman announced the following gentlemen as the Committee of Correspondence: Messrs Edwin Post, Thomas H. Richards, William Green, Jr., Abraham S. Hewitt, and John Travers.

On motion of Mr. Post, the President of the convention, Mr. Cooper, was added to the committee.

Mr. C. C. Haven offered a resolution in favor of the protection of *voluntary* labor; but it was objected to as likely to operate against the objects of the convention, whereupon the mover withdrew it.

Mr. Jackson moved that the proceedings of the convention be published in the papers of this state, and of New York and Philadelphia; which was agreed to.

The convention then adjourned.

Pacific Railroad.

CHAMBER OF COMMERCE,
New York, Nov. 5, 1849.

To Messrs. William Ingalls, E. H. Derby, James C. Dunn, P. P. F. Degrand, O. D. Ashley, Committee, Boston:

Gentlemen—Your favor of the 10th September addressed to the Chamber of Commerce, was referred by that body to the committee previously charged with the consideration of the subject of "Whitney's railroad." It accordingly becomes our duty to acknowledge your favor.

When asking the chamber to explain how the use of the road can be obtained for the present generation by Whitney's plan, you say—"It proposes first to build ten miles of road, and then, by the sales of the lands, to create the means to build the next ten miles" Allow us to remark that the plan proposes to sell the lands to *reimburse* the cost of the first ten miles. There is no suggestion made for *waiting* until these sales shall create the means for building the next ten miles. You then assume that it will take one year to build ten miles—one year to sell the lands—and then three years more to get the money, and that thus, at the end of five years the contractor would be ready to commence the second section of ten miles; and we are quite willing to admit at once, that, *at this rate*, it would indeed require the long period you name to complete 1700 miles of road.

We had supposed, however, after the first ten miles had been completed, under the sanction of an act of Congress—with the confidence it would beget, and the advantages it would confer, that the lands along the route would readily sell for much more than the cost of the road; that emigration would rapidly follow, if not accompany its progress, as labor would be in demand in the first instance, and provisions be required in the next. The work would thus furnish to a great extent, the means for its own prosecution; for the sale of the products of the soil would increase the means of the emigrants, and the settlements would add materially to the value of the lands.

In this way the long delay in selling the lands and getting the proceeds, which you appear to apprehend, we should hope may not be found to exist;—but that provision would thus be furnished to advance the road far more rapidly than you seem to think possible.

This committee having submitted their views in opposition to the other modes that were suggested, and stated their reasons for preferring the Lake Michigan route, believed that the plan of selling the public lands along the road, with the stimulus that would be afforded to emigration, and the efficient aid to be derived therefrom, presented the only available means for the accomplishment of the object;—and was therefore well worth the experiment. With the expression of our regrets, therefore, for the difference of opinion that exists between us as to the best mode of undertaking this truly national work, and without feeling too sanguine of a speedy result, we will venture to express the hope that the important object in view may be found worthy of the trial we thought it our duty to recommend, and which has already received the sanction of the chamber.

We remain, very respectfully,
Your obedient servants,

Signed,
JAMES D. OGDEN,
CHAS. KING,
CHAS. A. DAVIS,
L. BIERWIRTH.
O. SLATE, Jr.
} Committee.

CHAMBER OF COMMERCE,
New York, 6th Nov., 1849.

At a regular meeting of the chamber, held this day, the original document, of which the foregoing is a copy, was presented and read, and the same received the sanction of this chamber.

Attest: M. MAURY, Sec'ry.

High and Low Fares on our Railroads.

The Result as it is.

There has been some discussion in the railroad community, as to the effect of high and low fares. During the early part of the session, when business and traveling were checked by the cholera and scarcity of money, the impression began to prevail that the rates of fare adopted on our Northern lines were altogether too low, and injuriously affected the income of the railway companies, and we have shared in the doubts expressed by stodkholders; but since the money market has improved, and the cholera panic passed away, the revival and rapid increase of business are creating different impressions. Witnin the past year the following railway companies have reduced their rates about 20 to 25 per cent, viz: the Boston and Maine, the Fitchburg, and the Auburn and Rochester,—the first two carry passengers at two cents, and the last at rather less than two and a half cents a mile. The receipts of these companies for October, have been nearly as follows:—

	Oct., 1849.	Oct., 1848.	Inc
Boston and Maine.....	$51,000	$42,000	$9000
Fitchburg.....	50,000	38,000	12,000
Auburn and Rochester....	61,000	42,000	19,000

These lines, with such an income continued, must be earning ten per cent, and cannot reasonably desire more favorable results, aided, as they must be, by the natural growth of trade for the future. Low prices stimulate trade, manufactures, travel, and the growth of both villages and seaports. A few years since there were those who considered it a wise policy in the Boston and Lowell Railroad Company to charge four cents per passenger a mile, but since 1844 that company has about doubled its income—while reducing its charges from four to two cents per mile, it is now one of the lowest in its charges, and among the most successful in the show of its results—*Boston Courier.*

We publish the following extract from a letter of Mr. Gadsden, of South Carolina, to the Committee of the Memphis Convention:

The projected road from the valley of the Mississippi to the Pacific will be the Iliad of the American railway system; and the responsibility for the present of postponing or consummating the noble enterprise rests with the two conventions to be held at St Louis and Memphis.

If local interests, unimagined rival routes, or sectional jealousies are not permitted to mar the project; if harmony of action, on a common design, is had among the wiser heads who will confer on those occasions; if the projected railroad from Lake Michigan to Oregon, from St. Louis, or Natchez to San Francisco or San Diego, (whatever just divisions of opinion may exist as to the relative merits of each route) are permitted to be absorbed in the more harmonious approval of a railway from the valley of the Mississippi to the Pacific, you may approach the assembled wisdom at Washington with a memorial strongly influencing their action on the initiatory steps which may lead to consummation. The project is too grand, its designs too important to the varied interests of the whole Union to be frittered away in sectional and local conflicts on routes, each party more emulous of the improvement of their state or city than in accomplishing the greater object of extending the social, commercial and political relations of the Atlantic with the Pacific States of the Union.

The only action, it seems to me, therefore, fruitful of favorable results, which can be had at your respective conventions, would be a joint memorial to Congress for a thorough scientific exploration of all the practical routes of railroads from the Mississippi to the Pacific. Scientific reconnoisance, the theodolite, the level, and the chain, can alone shed light on the comparatively value and productiveness of the country through which the road is to pass; of the inequalities of the ground, and the mountain elevation which interpose obstacles to cheap construction, and of the distances which will have to be overcome. Impartial comparison, after careful examination and survey, can alone decide the merits of each route. And, whether that decision be the most favorable to the lake, the middle, or the southern, so let science and knowledge be the arbiters to conciliate conflicting interests in united action on the direction of a railway which will most certainly accomplish all the objects of a union between the ocean frontiers of the Atlantic and Pacific. Respectfully,

JAMES GADSDEN.

To J. T. Trezvant, Esq., and Committee of the Memphis Convention.

Pennsylvania.

Philadelphia and Reading Railroad Company—Officers for 1849.—President, John Tucker; Managers, Samuel Norris, John Towne, William R. Lajie, Hugh Campbell, Christopher Lower, of Orwigsburg; Matthias S. Richards, of Reading; Secretary and Treasurer, Samuel Bradford. G. A. Nichols, Engineer and general superintendent, Reading.

Pennsylvania Railroad—Directors for 1849.—Samuel V. Merrick, George W. Carpenter, Robert F. Stockton, Christian E. Spangler, David S. Brown. Thomas T. Lee, Stephen Colwell, Wm. C. Patterson.

By the Mayor, Aldermen and citizens of Philadelphia John Wisgaud, Morris L. Hallowell, Geo. Howell.

By the Commissioners of the county of Alleghany, William Wilkins, John H. Shomberger.

Geo. N. Bacon, Treasurer.

J. Edgar Thompson. Chief Engineer.

Cumberland Valley Railroad.—The Chambersburg Intelligencer says that the Cumberland Valley railroad is to be relaid in the coming spring with a new and substantial T rail, and adds—

By the time the road is relaid, the railroad from York to Harrisburgh (which connects with the Cumberland Valley railroad at this end of the Harrisburg bridge) will be completed, and we will then have direct communication by railroad from here to Baltimore, and our merchants and farmers will have a choice of markets. The time, too, necessary to make the trip, will be so much shortened as to ensure almost all the travel and freight to the railroad.

Ohio.

At a meeting held at the Court House last evening, in relation to a railroad from this place to Hillsborough, Gen. Walke having been called to the chair, and Calvin Shaw appointed Secretary, on motion of Thos. T. Scott, Esq., it was

Resolved, That a committee of three be appointed to draft and report resolutions to an adjourned meeting, and that a committee be also appointed to confer with the Directors of the Cincinnati and Belepre railroad.

Thos. T. Scott, Esq., and Drs. Davis and Trimble were appointed on the first committee, and Judge Reeves and Morris and Messrs Welsh, Woodbridge McDougal, Silvey and Gen. Rowe, on the last.—*Chillicothe Adv.*

Columbus and Xenia Railroad.

We are gratified in being able to announce that the most active measures are being employed to complete the above railroad. A commencement will be made on Monday next to lay the track at this end of the road, and a sufficient number of men are employed to secure at least three-fourths of a mile per day being laid. The entire road from Xenia to this place will be completed by the first of February, and sooner if the weather and other influences be favorable, but not as early as the first of January it is now believed. The most improved description of T rails will be used which are now stacked upon the ground opposite P. Hayden's Factory. Those bars are 18 feet long, and weigh each about 400 pounds, and a very large portion of them are ready to fit down to the ties, having been prepared in England at the establishment from whence they were imported. We understand that the rails were delivered at Montreal at a cost of one and a half cents per pound, which, with the transportation to Columbus, will bring it up to a little upwards of three cents per pound.

An engine was brought on the ground this afternoon from Cincinnati, which will be used to transport the iron from the banks of the canal in this city to the point where it it is required to be laid down. The bars will be fastened to the ties at the joints where they meet, by an entirely new process, termed chairs, which simply consist of a plate of wrought iron half an inch thick, 6 by 7 broad, being firmly attached to the ties by four half inch bolts, the two outside centres of which are turned up, forming a semi-circle precisely the dimensions of the two ends of the bars—in addition to this, bolts will be driven through the rails into the ties on each side at a distance of three feet asunder.

The grade of this road throughout the entire route is almost entirely level, and nearly in a straight line, and in this respect has not a rival in the United States. When completed this is calculated to be one of the most perfect railroads in the Union enabling the locomotives to travel at the rate of 30 miles an hour, conveying a train of cars with the utmost facility.—*Ohio Statesman.*

Virginia.

The Farmville Republican publishes the proceedings of a meeting of the people of Farmville and other citizens of Prince Edward, on the subject of the extension of the South Side railroad, from Petersburg to Farmville. Resolutions were adopted in favor of the measure, supported by speeches from Messrs H. E. Watkins, W. C. Flournoy, S. C. Anderson, and Dr. Leach. A committee was appointed to represent the Farmville meeting at a conference with a committee of Petersburg, and was authorised to assure that committee that in the opinion of the meeting one hundred thousand dollars can be raised by the Farmville community for the accomplishment of the desired extension.

We learn from the Norfolk Herald that the company who purchased the old Portsmouth and Weldon railroad, are determined to push the work thro' at the earliest day. The road is already under way the sills are laid to Carsville, and a contract made for extending them to Franklin, (seven miles further,) within the next 25 days. Iron is contracted for, to be sent from England direct to Norfolk, and the first cargo is expected within the next six weeks

Indiana.

Indianapolis and Peru Railroad.—The State Journal learns that the work on this important road is progressing as rapidly as was anticipated by its friends. Stock has been taken to the amount of $135,000, and the citizens along the whole line are determined to greatly increase that amount. Portions of the road between Peru and Noblesville have been let to responsible men, who are to receive their pay in the stock of the company. In a short time the whole of the grading and bridging between these places will be let out in the same way.

Wabash and Erie Canal.—The first boats on this canal arrived at Terre Haute on the 25th ult. The Express rightly notices the fact as a "new era in the business and commercial prosperity of Terre Haute." There were dinners, speeches and the roar of cannon, to mark the great occasion. The Express says:

We congratulate the country, particularly the Wabash valley, upon the bright prospects before them, and we have to say to the farming classes, attend well to your soil and you will soon be the most wealthy yeomanry of the Union. To our friends south, we promise all our aid in sending them too, the benefits we hope soon to enjoy, and when the waters of the lake mingle with the beautiful Ohio, we hope to meet you at some point upon the canal line to celebrate an achievement which promises so much for our people.

South Carolina.

Columbia and Greenville Railroad.—A meeting in favor of the railroad was held at Greenville on Tuesday last. Judge O'Neall, the President of the company, delivered an address, in the course of which he stated that the construction of the road was going on rapidly. By January, the road would be finished from Columbia to the crossing of Broad river, some 26 miles, and by the fourth of July next, to Newberry C. H. 48 miles. By the 3th of July next, all the grading to Anderson C. H. would be completed. The iron for the entire road to Anderson is procured, and enough for a portion of the road from Brown's to Greenville. The road and branches would be completed for about $1,200,000—the cheapest road in the United States.

Illinois.

Railroad from Rock Island to Peru.

The citizens of Rock Island and vicinity, embracing a portion of Iowa, are agitating the construction of a railroad from the Mississippi river at Rock Island to Peru, the southern terminus of the Illinois Canal. A public meeting was held at the former place on the 24th ult., to consider this subject, at which Alfred Sanders, Esq., of Davenport, Iowa, was chosen President, and A. M. Hubbard and Dr. S. T. Hume, of Moline, and Mr. Walker, of Henry county, Vice Presidents; and Fernando Jones, of Rock Island Secretary. The meeting was addressed by Hon. J. P. Cook, of Cedar co., Iowa, Messrs. Fulton and Price, of Davenport, and Messrs. Osborne, Norris, and Waite of Rock Island, and also by Col. J. L. Sullivan, President of the Central O. railroad. A good degree of spirit was manifested at the meeting, and the addresses, particularly that of Col. Sullivan, were received with much applause. Various committees were appointed to procure funds for a preliminary survey, to obtain statistical information, etc. etc.

The distance from Rock Island to Peru is about 80 miles, and the route, as usual in the west, is very favorable for railway construction. It is estimated that $3,500 per mile will prepare the road for the iron. This estimate may be somewhat below the mark, but the road could undoubtedly be constructed at a very low cost.

Railroads running west from the great lakes may be now regarded as of prime necessity, as opening outlets in a proper direction for western produce.—the value of which in new settlements, depends upon the facility with which it can be got to a market. In reference to the probable effect of this road upon the value of produce, we copy the following from the Rock Island Advertiser:

It is plain that whatever cost of transportation is paid by the exporters of our produce, must come, eventually, from the pockets of the farmers. If not paid in the discount upon the price of grain, it must be paid in the increased price of the articles of merchandise bought in exchange. It is frequently the case that when wheat commands 75 to 80 cts. in St. Louis, it is worth but 50 cents here, owing to the cost of transportation over the Lower Rapids.—The cost of transporting wheat from Rock Island to Peru by railroad will not exceed 3 cents per bushel. It can then be taken down the Illinois river to St. Louis, at greatly reduced rates, the rapids being avoided; or it can be taken on other railroads which will then connect Peru with the eastesn cities, and thus go directly to New York and Philadelphia. In this way will a market be opened directly with the east and with St. Louis, the competition in which together with the decreased rates of transportation,

willl raise the price of wheat in Scott county, at least fifteen cents on the bushel.

Tennessee.

Mr. Trousdale, the Governor of Tennessee, among other important things in his message to the legislature, says that the present common school system of that state is inefficient, owing to the limited amount of the annual appropriation. He recommends that it be largely increased, for which purpose he recommends that taxation be resorted to. He recommends that the aid of the state finances be extended to the four great railroads which now occupy public attention there, viz: the proposed railway from Virginia line to Knoxville—the Tennessee and Georgia road, already in progress of construction connecting Knoxville with the Georgia road, and the Nashville and Chattanooga, in rapid progress of construction, connecting Nashville with Chattanooga and that portion of the Mobile and the Ohio railroad proposed to be extended from south to north through the Western district of Tennessee.

Alabama.

Selma and Tennessee Railroad.

This work appears to be going ahead very rapidly, and is receiving a most liberal support from those immediately interested in it.

The Greensboro' Beacon gives some interesting facts in relation to the work in Dallas. Two gentlemen, Messrs. Weaver & Goldsby, subscribed each $20,000 on the spot, and pledged themselves to increase their subscriptions to $50,000 each. A delegate to the Selma convention from Shelby—Mr. Mc Clannahan—who has extensive iron works, offered to take $25,000, payable in iron. He also pledged in the same way, another gentleman in that county for 10,000. An individual in Benton, also extensively engaged in iron works, pledged his profits for five years as a subscription.

At a meeting recently held in Perry county, the following resolution, among others, was passed:

Resolved, That we believe the road, as proposed to be constructed by the Alabama and Tennessee railroad company, is entitled to the fund donation by Congress and accepted by this State, to promote the connection of the navigable waters of the Mobile bay with the Tennessee river; and that we respectfully petition the legislature to appropriate the same accordingly at its next session.

It will be seen from the following resolution passed at a recent railroad meeting held at Mobile, that on effort will be made to obtain some aid from the general government in behalf of the railroads in Alabama:

Resolved, That we do most earnestly urge upon the general assembly of Alabama the propriety and necessity of memorializing the Congress of the United States upon the subject of the public lands held by the U. States within our State—that the vast mass of these lands so held operate as a burden upon us and a great grievance—that they retard and prevent our prosperity—that they should be disposed of as quickly as possible; and could not, in our opinion, be better disposed of and applied than in works of internal improvement within our state, of which we stand in great need.

The following named gentlemen have been appointed Directors of the Alabama and Tennessee railroad company for the purpose of temporary organization:

Edmund King, Shelby county,	
P. G. Weaver,	F. S. Becton,
T. B. Goldsby,	John Mitchell,
J. W. Lapsley,	John Connolly,
W. Plattenburg,	G. C. Phillips,

Kentucky

Louisville and Frankfort Railroad.—The Louisville Journal says—"Thos. Smith, Esq., president of the Louisville and Frankfort railroad company, has succeeded in selling $120,000 of our city bonds in New York at 87½ cents on the dollar. He has also contracted for 3,500 tons of railroad iron of first quality, at $30 per ton, the company paying duty and freight from New York. This iron is sufficient to complete the road to Frankfort.

Georgia.

Burke County Railroad.—We learn that an election was held recently, at Waynesboro' for directors of the Waynesboro' railroad. The following gentlemen were elected—

Burke County—Mr. Douse, and Mr. John Poythress.

Savannah—A. R. Lawton, James P. Scriven, J. Stoddard, Wm. Dunkan and C. F. Mills.

Mr. Alexander R. Lawton was elected president of the company.

Vermont.

Vermont Valley Railroad.—At a meeting of the stockholders held on the 11th inst., at Brattleboro', the following directors were unanimously chosen—Horace Brooks, New York; Franklin Evans, Boston; F. R. Griffin, Guilford, Ct.; Dr. C. Chapin, Brattleboro'; P. R. Chandler, Putney, Vt.; Hugh H. Henry, Chester, Vt.; A. Crocker, Fitchburg.—At a meeting of the directors, Dr. C. Chapin was chosen president, and H. R. Harris, clerk.

The Valley road will connect at Bellows Falls with the Sullivan and Vermont Central, leading to Ogdensburgh, Passumpsic, Northern, Cheshire and Rutland and Burlington, giving to all the above roads direct communication with New York, over Vermont and Massachusetts, Connecticut River Hartford, New Haven and New York.

Maine.

Atlantic and St. Lawrence Railroad.

The following is a statement of the receipts for freight and passengers by the Atlantic and St. Lawrence railroad company for the quarter ending with October last:

	Passengers.	Freight.	Total.
August...	$7,517 56	$2,714 97	$10,232 53
September.	7,317 76	2,725 43	10,043 19
October...	7,525 22	4,608 88	12,224 10
	$22,360 54	$10,139 28	$32,499 82

Of the several amounts above stated, there were received for the transportation of freight and passengers between Portland and Yarmouth, which came from, or were transferred to, the Bath road, the following sums:

	Passengers.	Freight.	Total.
August....	$1819 64	$21 74	$1841 39
September.	1899 85	42 63	1942 58
October....	1765 90	85 13	1854 03
	$5485 50	$140 50	$5635 00

New Hampshire.

Ashuelot Railroad.—We are happy to announce, says the Keene Sentinel, that the contract for building the Ashuelot railroad, was closed with Messrs. Boody & Co., of Springfield, on Tuesday week, at the directors' meeting at Hinsdale, and that the work will be commenced immediately. The contract is for the entire work, and the road is to be put in running order in one year from this time, and from Keene to West Winchester by July next.

New York.

Syracuse and Rochester Railroad.—At a meeting of the board of directors of the Auburn and Syracuse, and Auburn and Rochester railroad companies, held at Auburn on the 15th inst., we understand it was resolved by both boards to join in application to the legislature to consolidate these companies into one corporation, with the name of "The Auburn Syracuse and Rochester railroad company," with power to construct a branch road through the canal villages between this city and Syracuse. This branch will serve the purpose of a double track, and will shorten the distance between this city and Syracuse about 20 miles.—*Roch. Adv.*

Notice.

Believing the time has fully arrived, when Forge and Furnace owners, and those interested in the manufacture of Iron in Vermont, should make some demonstration in favor of Protection of this branch of National Industry: We therefore cordially invite all as above interested, to meet us at the Town Room, in Middlebury Village, on Friday, the 30th of November, at 10 o'clock, A. M., to appoint delegates to meet Iron Masters of New York State, in Convention to be holden in Troy, sometime in the month of December next.

As an opportunity is thus afforded to co-operate with those thus engaged in this important movement, already extending through the country, to if possible, through the influence of facts and statistics, influence Congres so to remodel the tariff of 1846, as to give protection to the vast body of citizens directly and indirectly concerned in this branch of industry. It is to be hoped, that there will be a large attendance. Forge owners and others are earnestly solicited to collect all necessary information in the shape of statistics connected with the Iron business, and present them to the meeting when convened.

Nov. 19th, 1849.

W. H. HOLLFY,
O. W. BURNHAM,
L. MUNSON,
E. CHAPMAN,
SLADE, FARR & CO.,
A. B. HUNTLEY,

Newspapers are respectfully invited to copy the above.

Michigan.

Michigan Southern Railroad.

The above road was one of the great lines of public works projected in Michigan in 1836, and designed to connect Lake Erie and Lake Michigan, by running through the southern counties of this State. Like most of the works of the Western States growing out of the extraordinary speculative movements of the period referred to, its progress was arrested by the revulsion which followed, after reaching Hillsdale, a distance of 66 miles, from the inability of the State to construct it. In 1846 it was sold to a private company, with liberal provisions, either to continue it on the line designated by the State Commissioners, "or any where further southward than said line," or with liberty to abandon any portion the purchasers saw fit.

This company now propose to extend this line to Chicago, running through partly through the State of Michigan, and partly through that of Indiana, for which the company has charters in each State—forming a direct line of railroad between the southern shore of Lake Michigan and Lake Erie, ultimately to form one of the links in the great line of railway extending west from New York along the southern shore of Lake Erie. With a view to ascertain the cost of this extension, F. Harbach, Esq., an engineer well known to the public, was directed to prepare an estimate, the substance of which we now lay before our readers:

The *characteristics* of this combined route are:—A *maximum grade* going west—from Lake Erie to Hillsdale, 40 feet per mile—west of Hillsdale, 40 feet per mile—going east, 30 feet per mile, east of Hillsdale, and west of the same 25 feet per mile.

For *alignment*, no road can compare more favorably—consisting of long tangents and curves, where they occur, of large radii.

The country traversed by the proposed route of your road, is most beautiful and productive, being one continual line of small prairies and oak openings, from Hillsdale to Michigan City.

The *soil for the road bed*, for the whole extension,

is most unexceptionable; and I know of no road in the Union of the length of this, which can be kept in *repair* for so little expense. The bed for a portion of that part now in operation, is not so good, and must be replaced by other proper material.

The cost of extending your road westward to Chicago, via Coldwater—through Constantine to Goshen—and by South Bend, Laporte and Michigan City, including depot buildings, and a full equipment for the road will be as follows:

Grading, masonry, bridging, timber, chairs, spikes, laying tracks, rights of way, and all contingencies connected with these, for the entire line	$1,600,000
Iron rails, 60 lbs. per yard, for 175 miles and five miles for turnouts, at $50 per ton, delivered at Toledo or Monroe	900,000
Depot buildings at the termini	100,000
3 machine shops and fixtures	75,000
10 intermediate water stations	50,000
10 " lesser "	25,000
20 additional locomotives, at $7,500	150,000
100 " freight cars	150,000
20 " passenger, $2,000	40,000
30 second class, baggage and Post office do	30,000
80 gravel, lumber and repair cars	20,000
Total cost of extension, and additional shops, &c., for the whole road	$3,140,000

The road is in fair condition for doing the local business for two or three years, and perhaps until the main line is extended through; and then it must be rebuilt, with some of its grades modified. The cost of this, with its present value as fixed, should be added to the foregoing estimate, and a sum sufficient to relay it with a 60 lb. rail.

Present value of 78 miles of road and branch, and the equipment	800,000
Cost of relaying 68 miles main line, 60 lb. rail	510,000
Total for 248 miles, Lake Erie to Chicago, $17,943 per mile	$1,450,000

For this sum the head of Lake Erie, either at Monroe or Toledo, will be connected with Chicago by a railroad of the first order, not exceeding in length, by more than ten miles, the shortest possible line which can be constructed, and with a maximum grade going *eastward*, of 30 feet per mile, which is 15 feet less per mile than that of the direct route as reported by Mr. Baldwin.

To make perfect the connections with the roads along the southern shore of Lake Erie, and to connect this line with the great corn market of Lake Erie, Toledo—the Erie and Kalamazoo railroad, which extends from Toledo, 33 miles, to your southern road at Adrian, has been permanently leased to and is operated by your company. This must be rebuilt within two or three years; and it will cost, as rebuilt, and relaid with a 60 lb. rail, $550,000.—For this sum, interest or rents must be paid. Consequently, this sum should be added to the sum before named, as a part of the aggregate capital of this line of railway, which will then amount in gross to $5,000,000.

For this sum your company will have

the *main* line, Lake Erie to Chicago	248 miles.
The line Toledo to Adrian	33 "
Branch to Tecumseh, now in use	10 "
$17,182 per mile	294 miles.

The following is Mr. Harbaek's estimate of the income of the road:

Probable Income.—Mr. George R. Baldwin, in his elaborate report on the Buffalo and Mississippi route, (from Toledo to Chicago,) in 1847, has collected very extensive statistics of the resources and business of the district traversed by that line, and at page 70 he estimates the gross revenue from it at $1,347,000

On account of the advantages of your route as combined with that, you may safely add 25 per cent to the local business of the consolidated line 336,750

Giving a gross income of $1,683,750

50 per cent is a large allowance for expenses, on a line so cheaply repaired and so easily run. This gives a net income of 841,875

—nearly 17 per cent on a capital of 5 millions.

If Mr. Baldwin's estimate is thought too large for the first years of running, the gross income may be reduced to $1,200,000—and allowing one-half for expenses, as before, it will give a net income of 12 per cent. on the estimated capital of 5 millions, to begin with, and this will be increased as the business advances.

AMERICAN RAILROAD JOURNAL.

Saturday, November 24, 1849.

Railroads in New England

In every part of New England the interest in railroads is on the increase, unless possibly in Massasetts. Nearly every town of any considerable importance in that State has a railroad built, or in process of construction, running into it, or within striking distance. The feeling in favor of railroads, which was for a long time confined principally to Massachusetts, has extended itself into every part of New England, and will not be satisfied or put to rest till throughout all New England similar accommodations are secured.

MAINE.

In Maine the railroad movement is taking fast hold of the people in all parts of that great State.—*One hundred and forty-two miles* of railway have been opened in that State since July 1, 1848, viz:

Atlantic and St. Lawrence	47 miles.
Buckfield	13½ "
Kennebec and Portland	26 "
Androscoggin and Kennebec	55½ "
	142

The roads under contract and in progress are as follows:

Atlantic and St. Lawrence	100 miles.
Kennebec and Portland	44 "
York and Cumberland	48 "
Androscoggin	22 "
Total	244

The Androscoggin and Kennebec railroad is to be formally opened on the 27th November throughout its entire length, 55½ miles.

The Buckfield branch about the same time, and the Atlantic and St. Lawrence railroad a few days later, as far as Paris.

The Kennebec and Portland railroad has recently put its road under contract from North Yarmouth to Portland, and the same unites with the York and Cumberland, a few miles from the depot in the city of Portland. The two companies have purchased a depot site in common, and are to build a depot of sufficient size to accommodate all the roads terminating at Portland. For this purpose it is proposed to build a passenger depot 100 by 500 feet.

The Androscoggin railroad has been recently put under contract upon more favorable terms than any road yet constructed in New England.

A survey is now going on under charge of Col. A. C. Morton, of the river railroad from Bangor to Oldtown, on the shore of the Penobscot, under the charter of the Bangor and Oldtown railroad. This road, it is proposed, will be so located as to accommodate the vast lumber trade of the Penobscot, by running to more than 200 mills where are annually sawed from 150 to 175 millions feet of lumber.

At no time in the history of Maine has such a general feeling prevailed in favor of public improvement as at the present moment, and this feeling will not be checked till all her people are supplied with railway facilities.

NEW HAMPSHIRE.

New Hampshire has already some 560 miles of railway in operation, and nearly two hundred miles now in progress of construction all of which are being steadily pushed to completion by the unconquerable energy of her people.

We gave a list of her various railroads during the summer. Contracts have since been entered into for the construction of the Ashuelot railroad from Keene to the Connecticut river near Brattleboro'.

The Manchester and Lawrence railroad is finished, and a portion of the Portsmouth and Concord railroad is also done. The Boston, Concord and Montreal road is being steadily pushed on towards Rumney.

The New Hampshire Central is to be finished this year.

The Concord and Claremont is in part opened.

The Contoocook do.

The Cocheco do.

The Great Falls and Conway do.

VERMONT.

In Vermont unusual efforts are apparent in all parts of the State, to finish up the old works already under contract, and embark in new ones.

The Rutland and Burlington railroad is finished with the exception of 22 miles.

The Vermont Central is within 26 miles of Burlington.

The Rutland and Whitehall railroad is going forward.

The line from Brattleboro to Bellows Falls is under contract.

Numerous applications for new railroad charters have been acted upon by the Legislature of Vermont at its recent session.

The Montpelier and Connecticut River railroad has been chartered, to extend from Montpelier to Wells river. The route of this road has been recently surveyed and a very favorable line found.

The Rutland and Burlington railroad company have obtained an act authorising them to extend their line to St. Albans to a point of connection with the Vermont and Canada railroad. And in case the latter company do not construct their road to Canada line within a given time, the Rutland and Burlington company are authorised to extend their own line to the same point.

An additional act has also passed the Legislature of Vermont in aid of the road between Brattleboro' and Bellows Falls, and the construction of this road is soon to be entered upon.

There has been a movement for a charter for a railway from the mouth of the Passumpsic river to connect with the Atlantic and St. Lawrence railroad, which has been finally granted, under the name of the Vermont Eastern railroad.

This we regard as one of the important railway movements in New England. A connection with the Portland and Montreal railroad in the Connecticut valley will make a route to the White Mountains and Portland direct from the city of N. York, embracing a greater variety of attractive scenery than can be found on any route now travelled.

The trade and travel between New York and Canada East will pass over this line. Instead of injuring the prospects of Portland in view of the Montreal business, the effect of it will be to attract to Portland much of the trade of Upper Vermont and New Hampshire which is now drawn off to Concord and Boston.

Maryland.

Extension of the Baltimore and Ohio Railroad to the Ohio River.—At a meeting of the directors of this road, held at Baltimore on the 14th instant, the President of the company submitted a report upon its extension to the Ohio. It is an interesting and able paper, and we regret that we have room for only the more important portions of it. Our readers will see that the means at the command of the command of the company fully justify the assumption that the road can be completed within the time stated. The report was unanimously accepted, and it was voted to put the whole line immediately under contract.

We heartily congratulate the people of Baltimore on the prospect of the speedy completion of their cherished hope. The construction of this road will give to that city a position which can be taken from her by no rival work, and which will ever constitute her one of the leading cities of the country.

Estimated cost of the Baltimore and Ohio railroad from Cumberland to Wheeling, revised to present date:

1. Graduation, Masonry and Bridging.

From Cumberland to Tygart's Valley Bridge as per contract prices of first 3 lettings	$2,150,439
Add for tunnel arching and Bridge superstructures	173,432
Total from Cumberland to Tygart's Valley Bridge, 103½ miles	$2,323,871
From Tygart's Valley Bridge to Fairmont, 21 miles	302,524
From Fairmont to mouth of Piles Fork of Buffalo, 17 miles	207,805
Mouth of Piles Fork to Wheeling, 70 miles	1,208,141
Total from Cumberland to Wheeling, 211½ miles	$4,042,341
Off 10 per cent. from estimated cost of 108 miles from Tygart's Valley Bridge to Wheeling, which has not yet been let and which amounts to $1,718,470,	171,847
Total cost of Graduation, Masonry Bridging from Cumberland to Wheeling	$3,870,494
2. Railway Track.—Single track with 1 mile in 20 for sidings, 211½ miles, at $9,000	1,903,500
3. Depots and Water Stations at $500 per mile	105,750
4. Right of Way—Per contracts of Agents in part, and per estimate for rest,	100,000
5. Superintendance and Contingencies 5 per cent. on the above	298,987
Total estimate of cost of road complete from Cumberland to Wheeling 211½ miles, at an average of $29,657 per mile	$6,278,731

The entire cost of the road, then, to the city of Wheeling, supposing the reduction upon the letting to take place west of the Tygart's Valley river, to be less by 12 per cent than the line already under contract, would not exceed $6,278,731; and should the subsequent contracts prove as favorable as those already made, the total cost would not exceed by a very large amount the original conjectural estimate of $6,000,000.

What then, is the ability of this company to provide the requisite funds?

In addition to the revenue of the work itself, it is known that the company had originally $3,200,000 of the 5 per cent Sterling Bonds of the State of Maryland. Of this fund $5,000 were disposed of by my predecessor, and $200,000 during the past year. Under the effect of this last sale of $200,000 to the Messrs, Baring, Brothers & Co., it was confidently expected that the remaining bonds in the hands of the company would enhance rapidly—both at home and abroad. The confidence inspired by a strong and influential house, among European capitalists, in the soundness and credit of the state of Maryland, could not fail to be attended with the happiest results These Bonds have gone on to improve gradually until they have reached a limit which justifies the belief that this company may reasonably calculate on $3,000,000 from this certain and reliable resource. Indeed it can hardly be foreseen, in view of the prosperous condition of the state of Maryland, and her improving credit under the wise policy adopted by her Executive, that any contingency likely to arise, can deprive this company of their full par value, in any sales which may be made hereafter, whether at home or abroad.

If we estimate the proceeds of the bonds then at	$3,000,000
The receipts from revenue during the progress of the work at	1,000,000
and the subscription of Wheeling at	500,000
We have an aggregate of	$4,500,000

or more than two-thirds of the whole amount required to complete the connection with the Ohio river. In any state of the money market, the completion of the road *being certain*, and its present revenue more than equal to any amount of interest likely to be required, the credit of the company may be expected to afford essential aid. Nor is it doubted, that in contracting for the work that still remains to be let, west of the Tygart's Valley river, arrangements could be made to use the stock or bonds of the company as is customary in the construction of similar works; and the 20 per cent. reserved as a security for the faithful execution of their contracts might be stipulated to be paid to contractors in bonds instead of cash.

These and other similar arrangements which would be open to the company in the event of a failure of more advantageous plans, it would be their interest to resort to rather than encounter the ruinous sacrifices which must ensue from further delay in the prosecution of the road.

But it will appear by reference to the estimate of the Chief Engineer that the 22,000 tons of iron required for the superstructure of the entire road between Cumberland and Wheeling, constitute a large proportion of the aggregate cost as stated by him.—A correspondence has been opened abroad to ascertain the probable availability of the Company's Bonds meeting this heavy expenditure; and I feel justified in the expectation from the present state of the negotiation that the wants of the company may not unlikely be reduced to the extent of this item.

Assuming the estimate of the engineer then at	$6,278,731
Supposed available resources to be deducted	4,500,000
	1,778,731
And estimated cost of rails if purchased on time, exclusive of duty and other charges, say	650,000
Leaves to be provided	$1,125,731

This amount accomplished, the whole line of road fram Cumberland to the Ohio river can be let to contractors early during the coming spring.

Various plans have been suggested to make up the deficiency which would thus appear, on a fair estimate of the available resources now at the disposal of the company.

Those to which I would particularly invite the attention of the Board are

I. The issue of a preferred stock, to be subscribed for by instalments of 6, 12, 18 and 24 months, from the 1st of June next, so as to make the whole available in two years thereafter, being the period within which the road is expected to be opened.

Upon this issue I would recommend to the company the payment of 6 per cent., and the holder to have the benefit of its enhanced value, on reaching the Ohio river. by incorporating himself with the general stockholders, if he should so desire; but to make his election within a period to be fixed, whether he will retain his position as a preferred stockholder at a rate of interest not to exceed 6 per cent. This stock would be free from taxation, would take precedence of all other stock, and would not operate as a tax upon the resources of the company beyond the rate of interest which it is proposed to guaranty.

II. The issue of the company's bonds having a long period to mature, and guaranteed against both city and state taxation.

This would contemplate an early application to the Legislature of the State for an exemption from taxes of all bonds, in addition to those now in circulation, which may be issued in the direct prosecution of the road. That such an application would meet with a ready response from the Legislature, I cannot permit myself to doubt.

Should the plan of the preferred stock be selected as most likely to accomplish the object we have in view, I should still deem it important to secure this privilege—in any issue of bonds which the company might be called upon to make, either for the prosecution of its road, or the increase of its power.

During the past summer and autumn one hundred and three miles of this road, comprising the entire space between the town of Cumberland and the Tygart's Valley river, intersecting the N. W. turnpike a distance of a 100 miles from Parkersburg, have been placed under contract, and are now in active progress of construction. These lettings comprise every difficult section upon the extended line to Wheeling, leaving no part of the work which may not in the jugdment of the engineer, be urged to completion in two years from the 1st of June, 1850.

This road, if completed in the next three years, *would be the first avenue opened to the trade of the West*; if made dependent upon our own revenue, it must subject us to a competition which every day's delay must only contribute to render more formidable and and alarming.

The Baltimore and Ohio Railroad, gentlemen, was originally chartered with a view to the trade of the Ohio river, without reference to those more extended Railroad connections now in progress of formation. South of the city of Wheeling there can be no line of road which could, by possibility, interfere with the superior facilities of the Baltimore market. It may be safely assumed, that the the resources of the Ohio river alone, for which there can be no competition, will require more accommodation than this road when finished, will be able to extend without the aid of a double track. The transit of both passengers and tonnage from Cincinnati to Wheeling by the river transportation can be effected at rates which leave no doubt that this great highway must always command its full share of patronage.

The inducement which would be held out to commerce, and the general activity which must result as a consequence from a continuous communication with the resources of the great West, would give increased employment to capital, and attract the attention of business men in the city of Baltimore, as a point where they could safely calculate on a steady advancement in all the departments of trade and commercial enterprise.

It seems to me then, gentlemen, in consideration of the important facts to which I have endeavored to direct your attention, that no time should be permitted to pass in maturing plans to press on with this work. Delay would be as fatal at this critical juncture as the total abandonment of the enterprise.—It becomes every property holder in the city of Baltimore, to lend his cordial co-operation in making the credit of this Compmy available, to whatever extent it may be necessary to carry out the object we have in view. If success attend our efforts the risk cannot be great. By the completion of this road you have a line 390 miles in extent, between Baltimore and the city of Wheeling, forming an uninterrupted connection with the Ohio River—nearer to Columbus by 55 miles than Philadelphia, 216 than New York, and 336 than Boston.

Fire Brick.

THE Subscribers have constantly on hand Rafford's Stourbridge, Oak Farms Stourbridge, Lister, Wortley, Red and White Welsh Fire Bricks, common and fancy shapes. Also,

ROOFING SLATES,

from the best Welch quarries, and of all sizes. Also,

COAL,

of all kinds—Liverpool Orrell and Cannel, Scotch, New Castle, Pictou, Sidney, Cumberland, Virginia, and all kinds of Anthracite coals. Also,

Pig Iron, Salt, etc., etc., for sale at the lowest market price. Apply to

SAMUEL THOMPSON & NEPHEW,
275 Pearl and 43 Gold Sts., New York.
November, 23, 1849.

DUNLAP'S HOTEL,

On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

Machinery Warehouse.

S. C. HILLS, No. 43 Fulton street, New York, has constantly for sale Steam Engines, Boilers, Lathes, Chucks, Drills, Planers, Force and Suction Pumps; Tenoning, Morticing and Boring Machines, Shingle Machines, Bolt and Nut Machines, Belting, Oil, Iron and Lead Pipe; Rubber, Percha and Leather Hose, &c., &c.

S. C. H.'s arrangements with several machine shops are such that he can supply, at very short notice, large quantities of machinery.

November 23, 1849.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND

ENGINEERING AND MACHINE FILES,

which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23, 1849.

To Proprietors of IRON FOUNDRIES.

FINE Ground *Sea Coal Foundry Facing* to mix with moulding sand, causing the sand to peel off the castings easily; *Charcoal Blacking; Lehigh Blacking; and Soapstone Dust; also Black Lead Dust* for facing very nice work, always on hand and for sale by

G. O. ROBERTSON,
303 West 17th St.,
or 4 Liberty Place, between Liberty st. and
Maiden Lane, New York.

November 3, 1849. 1m

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Swiiches, etc.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to C. LIEBRICH,
46 South 8th St., Philadelphia.

November 3, 1849. 6m*

TO CONTRACTORS.

SECOND LETTING OF THE MOBILE AND OHIO RAILROAD.

SEALED Proposals will be received at the office of the Company at Mobile, until noon of SATURDAY, the 8th day of December, 1849, for the graduation, masonry, bridging, grubbing and clearing of sixty two miles, and for the manufacture and delivery of Track Timber for seventy miles of the Mobile and Ohio Railroad, beginning at and extending westwardly out of Mobile. Plans, profiles, specifications, &c, will be ready for inspection on and after the 1st day of November. The work will be divided into small sections, and persons bidding can propose for one or more, or for the whole work. Payments will be made monthly, but from 10 to 25 per cent. of the value of the work done will be retained as collateral security until the competion of the contract. The work is to be commenced immediately after the letting, and a reasonable time given for completion.

The seventy miles now advertised extends through the pine woods of Alabama, and over some sand and sand stone ridges—the whole length being as healthy at all seasons as any part of the United States. The work is worthy the attention of Northern and Western contractors, as those from the South.

It is expected that 200 or 250 miles of the route will be put under contract before the completion of the work now advertised for. Testimonials of character and ability to perform the work bid for, will be required of those not personally known to the President or Chief Engineer.

JOHN CHILDE, Chief Engineer.

NOTICE TO CONTRACTORS.—Office of the Cincinnati, Hamilton and Dayton Railroad Company, Nov. 3d. 1849.

Sealed Proposals will be received at this office until THURSDAY, the 13th day of December next, for the Grading, Masonry and Bridging of the Southern Division of the Cincinnati, Hamilton and Dayton Railroad, extending from the city of Cincinnati to the town of Hamilton, Butler county, a distance of about 25 miles

The work will be ready for inspection in ten days previous to the letting, and all the necessary information will be given by the undersigned and the assistant Engineers.

Proposals to be addressed to S. S. L'Hommedieu, Esq. President of said Company, or to the undersigned. Bidders not known to the President and Directors, or to the undersigned, will be required to give satisfactory testimonials as to character and qualifications.

R. M. SHOEMAKER, Engineer.

To Contractors.

Office of the Columbus and Lake Erie R.R. Co.
Newark, Ohio, October 17, 1849.

SEALED Proposals will be received at this Office until the 30th day of November next, for laying 60 *miles* track with H rail (58 to 60 lbs. per yard weight). The work to be commenced immediately, or not later than December 15th.

Also for furnishing the necessary cast iron chairs for the same.

Proposals are invited for cash payments, and also for the whole or any part in the 7 per cent. bonds of the company. Any information desired will be furnished on application to the undersigned.

GEO. W. PENNEY,
Superintendent, etc,

To Contractors.

SEALED PROPOSALS will be received at the office of the James River and Kanawha Company in Richmond, until the 23d day of November next, for the construction of a stone dam across James River at Maiden's Adventure Falls, twenty-eight miles above Richmond.

The dam will be about 1100 feet long and 10 feet high.

The work will be paid for in current Bank notes.—Besides the usual reservation of 20 per cent. on the monthly estimates, the Contractor will be required to give ample security, satisfactory to the Board of Directors, for the completion of the work at the time and in the manner specified in the contract.

Plans of the above work will be exhibited, and specifications thereof delivered to the contractor, at the Company's office in Richmond, by the 5th day of November next, on application to the Secretary of the Company.

WALTER GWYNN,
Chief Engineer J. R. & K Co.

Richmond, October 17, 1849.

Patent India Rubber Steam Packing.

THIS article, made by the subscriber, who alone is authorised to make it, is warranted to stand as high a degree of heat *as any that has been or can be made by any person*—and is the article which has made the reputation of India Rubber Steam Packing and the demand therefor. A large assortment of all thicknesses requisite for any description of engines, steam pipes, valves, etc., constantly on hand and for sale by the manufacturer and patentee, who will give every information regarding its properties, mode of use, etc. at the warehouse. JOHN GREACHEN, JR.,
98 Broadway, opposite Trinity Church.

New York, October, 1849.

Cop Waste.

CLEAN COP WASTE, suitable for cleaning Railroad, Steam boat and Stationary Engines, constantly an hand and for sale by

KENNEDY & GELSTON,
5½ Pine St., New York.

October 27, 1849, 3m

To Railroad Companies.

FOR SALE—A Second-hand Locomotive Engine and Tender, of about 10 tons weight, in good order, and *warranted to perform well.* Any company wanting a cheap engine for a passenger or light burden train, will rarely meet with an opportunity so favorable as the present. The engine and tender are in perfect running order, and will be tested to the satisfaction of any one wishing to purchase. Price $1,500.

Address J. B. MOORHEAD,
Frazer P.O., Chester county, Pa.

P.S.—The Engine can be seen by calling on H. Osmond & Co., Car-builders, Broad st., Philadelphia.

September 6, 1849.

Engine and Car Works,

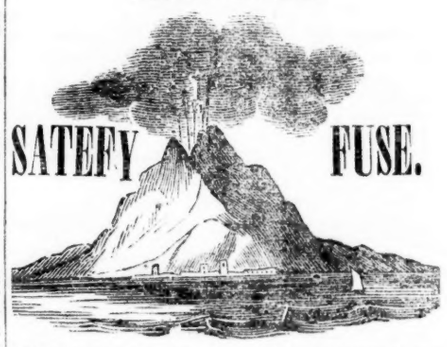
PORTLAND. MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of $250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery. HORACE FELTON,
Superintendent.

JAMES C. CHURCHILL,
General Agent and Clerk.

ETNA



THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,
Sole Manufacturers,
No. 85 Liberty St.
NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the *Etna Safety Fuse* at the late Fair held in this city.

November 3, 1849. 1y

C. W. Bentley & Co,

IRON Founders, Portable Steam Engine Builders and Boiler Makers, Corner Front and Plowman Sts., near Balttmore St. Bridge,

BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupyidg but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet,)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fillings for Steam, Water, Gas, etc., constantly on hand,

Baltimore, June 6, 1849.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,

SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.

Philadelphia, June 16, 1849. 1y25

Norwich Car Manufactory FOR SALE.

WILL BE SOLD at public auction on the premises, on Wednesday, the 2d day of January next, at 10 o'clock A.M., the entire establishment and property of the Norwich Car Manufactory, consisting of

1 Brick, slate roof building, 50 by 150 feet, 2 stories, used for setting up cars, cabinet work, upholstery, etc.
1 Brick, slate roof building, 40 by 190 feet, 1 story, used for blacksmith and machine shop.
1 Brick, slate roof, engine and dry house, 30 by 40.
1 Lumber house.
2 Wood buildings, 50 by 64, and 54 by 120 feet, for painting and finishing cars.
1 Barn, 18 by 28 feet.
1 Wood dwelling house, 21 by 28 feet.
1 Brick block, six tenaments, two stories.
A number of building lots.

Together with all of the machinery, tools and fixtures connected with the same, consisting of—steam engine and boilers, several plaining and sawing machines, turning lathes, boaring, punching, morticing, and a variety of other labor saving machines, constituting as complete and extensive an establishment for the manufactory of Railroad Cars as any in the country, and capable of working one to two hundred hands, and doing a business of $200,000 or more per annum.

It is situated on the Norwich and Worcester Railroad, half a mile from the city of Norwich, at the head of navigation of the River Thames, affording the most desirable facilities for the transportation of cars and materials, and in the immediate vicinity of various and extensive manufacturing and mechanical establishments. It has been in operation about two years, several of the buildings having been completed the present year. The whole, with the exception of the vacant lots, is leased on favorable terms for four years from February next. For further information apply to J. G. W. TRUMBALL, WALTER LESTER. } Trustees

October 24, 1849.

CHRONOMETERS.

MERCHANTS, Ship Owners, Captains and others, are invited to examine the advantages offered in the purchase of Chronometers, by HEWITT & SON, Makers, 92 Wall Street, (up stairs,) in their superior quality and great reduction of price.

H. & S. have for many years been engaged in the manufacture of Chronometers, for the first houses in the trade; and also, for the Navy of most Nations, and have received numerous rewards for their superior performance. Their Chronometers may be obtained from the Observatory at Liverpool, by order from H. & S., and at City Road, London. They are warranted to give satisfaction; but if not approved of, will be exchanged in New York, London, or Liverpool.

Rating, Cleaning and Repairs, at *low charges*.
The Trade supplyed on the most liberal terms.
November 17, 1849.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by

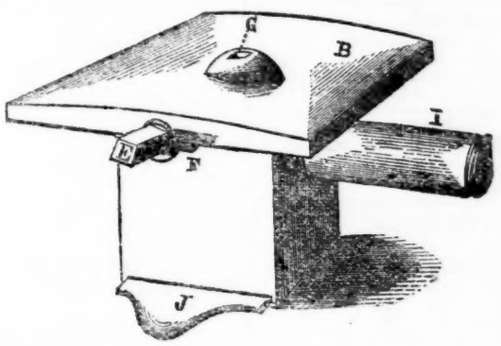
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

RAILROAD India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metalic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.
May 24, 1849.

E. Harris' Patent Rotary Blacksmith Tuyere.



LETTERS Patent were issued January 9, 1849, to E. HARRIS, of Springfield, for an Improved Rotary Blacksmith Tuyere. Since that time there have been some hundreds put in operation, giving satisfaction and full proof of superiority over all others.

This Tuyere is so arranged that by one movement it can be changed from the largest work to the smallest; at the same time the fire is changed in proportion, thereby making a great saving in coal. Words cannot convey the full merits of this Tuyere; nor is it deemed necessary to speak in disparagement of other Tuyeres, as every smith is capable of judging for himself, and will give merit where merit is due.

I will simply say that there has not been a single instance where I have had my Tuyere put in use but it has given full satisfaction, and is recommended by all who have used them, as being superior to any other ever introduced. I would invite all to give them a trial; and the names of those using them being given, I hope it may induce others to try them, as they recommend themselves.

Western Railroad Shop,	Springfield,	Mass.
" "	Pittsfield,	"
Connecticut val.	Springfield	"
" "	N. Hampton	"
Hartford "	Hartford,	Conn.
New Haven "	New Haven	"
Norwich and Worcester,	Norwich	"
N. York and N. Haven,	New Haven	"
Saratoga and Whitehall,	Saratoga,	N. Y.
Vermont Central,		
Hudson and Berkshire,	Hudson,	
L. Kingsley,	Canton,	Mass.
Hadley Falls Co.	Ireland,	W. Springfield, Mass.
Sidney Patch,	Boston,	"
Ames Manuf. Cor.,	Chickopee,	"
American Machine w'ks,	Springfield	"
Dean, Packard & Mills	"	"
G. Frank Bradley,	N. Haven,	Conn.
Andrew Baird,	"	"
Collis & Lawrence	"	"
Slate & Brown,	Windsor Locks,	
Gage,	Nashua,	N. H.
Machine shop,	Manchester,	"
Louis F. Lanney,	Baltimore,	Md.
J. H. Baerdid,	179 Chambers st.	N. Y.
J. Fanning	Rochester,	"
G. W. Hunt	41 Gold st.	"
Chamberlain & Waldo,		"
P. S. Burges, carriage maker,		"
Samuel Miller,		"
J. Leggett,	Steverson falls,	"
J. E. Harris,	Hillsdale,	"
John L. Graham,	Albany,	"
David Dalsell,	South Egremont,	Mass.
Roys & Wilcock,	Berlin,	Conn.

Agents for the sale of Tuyeres:
B. B. Stevens in New York and Connecticut.
W. S. Seymour in Massachusetts and R. Island.
A. J. VanAllen has the Agency for the Western and Southern States, and is now travelling through those States. Any communication addressed to the patentee will receive prompt attention.

E. HARRIS, Patentee,
Springfield, Mass.
November 23, 1849.

A New Paper for the New Year.

The Subscriber, having met with public favor (which he takes this occasion to acknowledge,) as foreign correspondent, contributor and editor, has now determined, by the advice of friends, *to work for himself*, and carry into effect plans which have been long and carefully considered, for the establishment of a journal in Boston, which will combine the leading features of the best weeklies of the Old and New World. Early in December next, he will commence the publication of

THE AMERICAN SENTINEL,

A General Newspaper and Weekly Review;
To appear once a week, printed with clear new type on substantial white paper, with occasional illustrations, and to be enriched with original articles, from contributors of merit,

—ON—

Political Economy, Biography, The Military, Agriculture, The Fine Arts, Science, Foreign Scenes, El Dorado, Literature, Free Masonry, History, Antiquities, Table Talk, Popular Rights, Romance and Reality, Social life, Mechanics, Finance, Commerce, Poetry, Philosophy, Diplomacy, Travels, The Drama, etc., etc.,

AND ITS DISTINGUISHING FEATURES WILL BE

I. *Perfect Independence;* being influenced by no party organization, and confident that whoever speaks the truth out of a sound heart, will find an echo in public opinion.

II. *Liberality of Sentiment;* combined with manliness of expression on all occasions.

III. *The Regular Employment of Able Contributors;* both at home and abroad, each one of whom will have a separate department unper his charge.

IV. *Freedom from Deceit;* by rejecting all quack medicine and other advertisements calculated to mislead the public. No book will be reviewed until it has been read; no music recommended until it has been heard; no invention eulogized until it has been examined, and no exhibition praised until it has been seen—nor can favor ever be purchased at a stated price per line.

V. *Purity of Style and Expression.* While illustrating the present and the past, earnest endeavors will be made to edify and amuse, but not to pander to vicious tastes by searching into the world's foulest corner for plague blotches, in order to profit by the loathsomeness of the exhibition.

In general, THE AMERICAN SENTINEL will be a high toned Register of passing events, ever ready to defend the honor and interest of the United States, and always on the *qui vive* for novelty, wit and humor. For the first time in his life the proprietor asks public support, pledging himself to give his paper that independent, high toned and popular character which the above outline promises.

☞ The price of the American Sentinel will be two dollars per annum, payable in advance—three copies in one envelope, five dollars. A liberal allowance will be made to agents. BEN: PERLEY POORE.

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front-street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y.

Text Book of Mechanical Drawing,

FOR the use of SCHOOLS and SELF-INSTRUCTION, containing,

1st. A series of progressive practical problems in Geometry, with full explanations, couched in plain and simple terms; showing also the construction of the *parallel ruler, plane scales* and *protractor*.

2d. Examples for drawing *plans, sections* and *elevations* of Buildings and Machinery, the mode of drawing elevations from *circular* and *polygonal* plans, and the drawing of Roman and Grecian Mouldings.

3d. An introduction to *Isometrical drawing*, with 4 plates of examples.

4th. A treatise on *Linear Perspective*, with numerous examples and full explanations, rendering the study of the art easy and agreeable.

5th. Examples for the projection of shadows.

The whole illustrated with 50 STEEL PLATES.
Published by WM. MINIFIE & CO.,
114 Baltimore St., Baltimore, Md.
Price $3, to be had of all the principal booksellers.

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 1 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in. thick. *Rubber and Gutta Percha Bands.* These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street.
New York, May 21, 1849.

Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.

Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT,
cor. Steuben and Water sts. Albany.
August 24, 1848.

To Steam Engine Builders.

THE Undersigned offer for sale, *at less than half its cost*, the following *new machinery*, calculated for an engine of 62 inches cylinder and 10 feet stroke, viz:

2 Wrought Iron Cranks, 60 inches from centre to centre.
1 Do. do. Connecting Rod Strap.
2 Do. do. Crank Pins.
1 Eccentric Strap.
1 Diagonal Link with Brasses.
1 Cast Iron Lever Beam (forked).

The above machinery was made at the West Point Foundry for the U. S. Steamer Missouri, without regard to expense, is all finished complete for putting together, and has never been used. Drawings of the cranks can be seen on application to

HENRY THOMPSON & SON,
No. 57 South Gay St., Baltimore, Md.
Sept. 12, 1849.

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address JAMES ROWLAND,
Prest. Beaver Meadow Railroad & Coal Co.,
Philadelphia.
or, L. CHAMBERLAIN, Sec'y,
at Beaver Meadow, Pa.
May 19, 1849. 20tf

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee. G. A. NICOLLS,
Reading, Pa.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

GREAT NORTHERN & SOUTHERN MAIL ROUTE. From New York to Charleston, S. C. daily, via *Philadelphia, Baltimore, Washington City, Richmond, Petersburg, Weldon and Wilmington, N. C.*

Travellers by this route, leaving New York at 4½ p. m., Philadelphia at 10 p.m., and Baltimore at 6 a.m., proceed without delay at any point on the route, arriving at Richmond, Va., in a day, and at Charleston, S. C., in two and half days from New York.

Through tickets from New York to Charleston, $20 00
" " Baltimore to Richmond, 7 00
" " " " Petersburg, 7 50

For tickets to Richmond and Petersburg, or further information, apply at the *Southern Ticket Office, adjoining the Washington Railroad Ticket Office, Pratt Street, Baltimore* STOCKTON & FALLS.
October, 1849.

NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch.

Chilled Wheels for Cars, Tucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by
E. S. NORRIS.
April 11, 1849.

Wanted,

A Second Hand Locomotive, weighing from 10 to 12 tons. It is required that in answer, it will be stated, whether the engine has inside or outside connections—the price of the same delivered at Portland, Maine, and terms of payment expected. Address
VIRGIL D. PANIS,
President Buckfield Branch Railroad,
Portland, Maine.
November 10, 1849. 3t45

ENGINEERS.

Arrowsmith, A. T.,
Buckfield Branch Railroad, Buckfield, Me.

Bancks, C. W.,
Civil Engineer, Vicksburg, Miss.

Berrien, John M.,
Michigan Central Railroad, Marshall, Mich.

Buckland, George,
Troy and Greenbush Railroad.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Davidson, M. O.,
Eckhart Mines, Alleghany Co., Maryland.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,
South Oyster Bay, L. I.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

Harry, P.,
Binghamton, New York.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Higgins, B.
Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Reynolds, L. O.,
Central Railroad, Savannah, Ga.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Robinson, James P.,
Androscggin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukie, Wisconsin.

BUSINESS CARDS.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
IMPORTER OF THE
GENUINE WICKESRLY GRINDSTONES,
NO. 8 LIBERTY STREET,
NEW YORK.

Doremus & HarriS,
ANALYTICAL & CONSULTING CHEMISTS,
179 BROADWAY, NEW YORK.
☞SCHOOL OF CHEMISTRY.☜

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Cruse & Burke,
Civil Engineers, Architects and Surveyors,
Office, New York State Institution of Civil Engineers,
STATE HALL, ALBANY., N. Y.

Drawings, specifications and surveys accurately executed. Pupils instructed theoretically and practically at a moderate premium.
May 26, 1849.

Railroad Car Manufacturer's Furnishing Store.
F. S. & S. A. MARTINE,
IMPORTERS AND MANUFACTURERS OF
RAIL ROAD CAR & CARRIAGE LININGS,
PLUSHES, CURTAIN MATERIALS, ETC.,
112 WILLIAM ST., NEAR JOHN.

3-4 and 6-4 Damasks, Union and Worsted; Moreens, Rattinetts, Cloths, Silk and Cotton Velvets, English Buntings

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Walter R. Johnson,
CIVIL AND NINING ENGINEER AND Attorney for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Starks & Pruyn,
MANUFACTURERS OF ALL KINDS OF
STEAM BOILERS,
52 and 54 Liberty, corner of Pruyn street
Nathan Starks, ALBANY Special Partner
Wm. F. Pruyn, R. H. Pruyn.
Iron Railing, Bank and Vault Doors, Iron Shutters Bridge and Roof Bolts, Heavy Jobbing and Forging of all kinds.
☞ For particularss ee Adv. in another column.

J. A. Burdett,
BLACKSMITH,
No. 176 Chambers street,
(*Between Greenwich and Washington,*)
NEW YORK.

Quarry Sledges and Hammers, constantly on hand and made to order, & warranted. Forger or all kinds of Ship, Steamboat and Bridge Work. Also, Forging to Draft or Pattern.
Screw Bolts, Dock Bolts and Spikes. 1m45

To Engineers and Surveyors.
E. BROWN AND SON Mathematical inst. makers No. 27 Fulton Slip, New York, make and keep for sale, Theodolites, Levelling inst., Levelling rods, Surveyors Compasses, and Chains, Cases of Mathematical drawing insts. various qualities, together with a general assortment of Ivory Scales and small insts. generally used by Engineers.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

James Laurie, *Civil Engineer,*
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.
Railroad Routes explored and surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.
October 14, 1848. 6m*

James Herron, *Civil Engineer,*
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

To Railroad Companies.
—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.
NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,
Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.
May 16, 1849.

Eaton, Gilbert & Co.,
Railroad Car, Coach and Omnibus Builders,
TROY, N. Y.

Hudson River Foundry,
THOMAS & COLLINS,
130 Quay Street, Albany.

To Railroad & Navigation Cos.
MR. M. BUTT HEWSON, *Civil Engineer*, offers his services to Companies about to carry out the surveys or works of a line of Navigation or Railroad. He can give satisfactory references in New York City as to his professional qualifications; and will therefore merely refer here to the fact of his having been engaged for upwards of two years conducting important Public Works for the British Government.
Communications will find Mr. Hewson at the office of the Railroad Journal, 54 Wall Street, New York.

J. T. Hodge,
No. 1 New street, New York.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED —'Potomac' and other good brands of Pig Iron.

IRON.

Railroad Iron.
500 Tons, afloat, weighing 57 pounds per lineal yard, for sale by
COLLINS, VOSE & CO.,
158 South St.
New York, November 17, 1849. 1m46

Railroad Iron.
THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.
COLLINS, VOSE & CO.,
158 South St.
New York, November 17, 1849.

Railroad Iron.
1600 Tons, weighing 60½ lbs. per yard.
185 " " 57½ "
580 " " 53 "
of the latest and most approved patterns. For sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.
New York, Oct. 13, 1849.

Railroad Iron.
THE Undersigned have on hand, ready for immediate delivery, various patterns of Iron Rails, of best English make, and manufactured in conformity with special specifications.
They offer also to import and contract to deliver ahead—on favorable terms.
DAVIS, BROOKS, & CO.,
68 Broad street.
New York, Oct. 11, 1849.
☞ Drawings and Patterns of the most approved Rail—and specifications of quality and make of same, are on hand at their office, for examination of parties who may desire to inspect the same. D., B. & Co.
Oct. 11, 1849.

MANUFACTURE OF PATENT WIRE ROPE and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers, etc, by
JOHN A. ROEBLING, *Civil Engineer,*
Pittsburgh, Pa.
These *Ropes* are now in successful operation on the planes of the Portage railroad in Pennsylvania, on the Public Slips, on Ferries, and in Mines. The first rope put upon Plane No. 3, Portage railroad, has now run four seasons, and is still in good condition.

Railroad Iron.
THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp.
They are generally prepared to contract for the delivery of Railroad Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms. ILLIUS & MAKIN.
41 Broad street.
March 29 1849. 3m.13

Glendon Refined Iron.
Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES. — The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.
JOHN F. WINSLOW, *Agent.*
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Bro. [illegible], Baltimore, Md.

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-2 TO 8 INCHES DIAMETER.
These are the ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers
THOMAS PROSSER,
Patentee.
28 Platt street, New York.

Railroad Iron.
THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
22 South William street,
February 3, 1849. New York.

Iron Store.
THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Railroad Iron.
THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.
November 6, 1848.

Railroad Iron.
THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.
Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.
REEVES, BUCK & CO.,
45 North Water St., Philadelphia.
March 15, 1849.

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAVING THEIR
IRON FOUNDRY AND MACHINE SHOP
In complete operation, are prepared to execute faithfully and promptly, orders for
Locomotive or Stationary Steam Engines,
Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,
Slide, Hand or Chuck Lathes,
Machinery for cutting all kinds of Gearing.
Hydraulic, Tobacco and other Presses,
Car and Locomotive patent Ring Wheels, warranted,
Bridge and Mill Castings of every description,
Gas and Water Pipes of all sizes, warranted,
Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

☞Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

☞ Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

American and Foreign Iron.

FOR SALE,

300	Tons	A 1, Iron Dale Foundry Iron.		
100	"	1,	"	"
100	"	2,	"	"
100	"	"	Forge	"
400	"	Wilkesbarre	"	"
100	"	"Roaring Run" Foundry Iron.		
300	"	Fort	"	"
50	"	Catoctin	"	"
250	"	Chikiswalungo	"	"
50	"	"Columbia" "chilling" iron, a very superior article for car wheels.		
75	"	"Columbia" refined boiler blooms.		
30	"	1 x ¼ Slit iron.		
50	"	Best Penna. boiler iron.		
50	"	"Puddled"	"	
50	"	Bagnall & Sons refined bar iron.		
50	"	Common bar iron.		

Locomotive and other boiler iron furnished to order.

GOODHUE & CO.,
New York. 64 South street

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,
No 57 South Gay St., Baltimore, Md.,

Offer for sale, *Hot Blast* Charcoal *Pig Iron* made at the *Catoctin* (Maryland), and *Taylor* (Virginia), *Furnaces; Cold Blast* Charcoal Pig Iron from the *Clover-dale* and *Catawba*, Va., Furnaces, suitable for *Wheels* or *Machinery* requiring *extra* strength; also *Boiler* and *Flue Iron* from the mills of Edge & Hilles in Delaware, and *best quality Boiler Blooms* made from *Cold Blast Pig Iron* at the *Shenandoah Works*, Va. The productions of the above establishments can always be had at the lowest market prices for approved paper.

American Pig Iron of other brands, and *Rolled* and *Hammered Bar Iron* furnished at lowest prices. Agents for *Watson's Perth Amboy Fire Bricks*, and Rich & Cos. New York Salamander Iron Chests.

Baltimore, June 14, 1849. 6 mos

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1¼ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.

JOB CUTLER, *Patentee.*

☞ These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

Railroad Iron.

THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to

COOPER & HEWITT, *Agents.*
October 30, 1848. 17 Burling Slip, New York.

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

Iron.

THE SUBSCRIBERS having resumed the agency of the New-Jersey Iron Company, are prepared to execute orders for the different kinds and sizes of Iron usually made at the works of the company, and offer for sale on advantageous terms.—

150	tons	No. 1 Boonton Foundry Pig Iron.		
100	"	No. 2	do.	do.
300	"	Nos. 2 & 3 Forge	do.	do.
100	"	No. 2 Glendon	do.	do.
140	"	Nos. 2 & 3 Lehigh Crane	do	do.
100	"	No. 1 Pompton Charcoal		do.
100	"	New-Jersey Blooms		
50	"	New-Jersey Faggoting Iron, for shafts		

Best Bars, ½ to 4 inch by ½ to 1 inch thick.
Do do Rounds and Squares, ⅝ to 3 inch.
Rounds and Squares, 3-16 to 1 inch.
Half Rounds, ½ to 1 in. Ovals & Half Ovals ⅝ to 1¼ in.
Bands, 1¼ to 4 inch. Hoops, ⅝ to 2 inch.
Trunk Hoops, ⅜ to 1½ in. Horse Shoe & Nut Iron.
Nail Plates. Railroad Spikes.

DUDLEY B. FULLER & Co., 139 Greenwich-st. and 85 Broad-st.

WILLIAM JESSOP & SONS'

CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,
PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

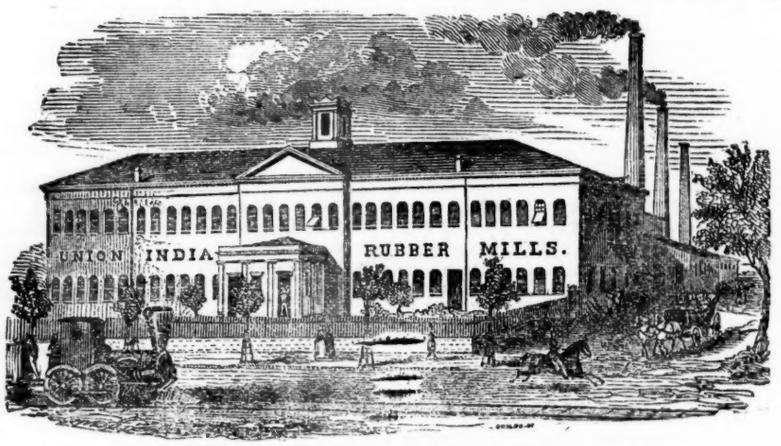
SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, *Agent,*
Albany Iron and Nail Works.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

☞ HEAD QUARTERS FOR RUBBER GOODS. ☜



The Union India Rubber Company,

MANUFACTURERS AND DEALERS IN EVERY VARIETY OF

GOODYEAR'S PATENT METALLIC RUBBER FABRICS,

Which they offer on the most liberal terms at their Warehouse,

NO. 19 NASSAU STREET, NEW YORK.

Articles which this Company has the exclusive right to make comprise in part

Beds,	Overcoats,	Life Preservers,	Mail Bags,	Camp Blankets,
Pillows,	Leggins,	Boat Floats,	Breast Pumps,	Travelling Bags,
Cushions,	Syringes,	Souwesters,	Saddle Bags,	Wading Boots,
Caps,	Canteens,	Gun Cases,	Clothing of all kinds,	Horse Covers,
Tents,	Buoys,	Portable Boats,	Carriage Cloth, assor.	Piano Forte Covers,
Bottles,	Maps,	Horse Fenders,	Hospital Sheeting,	Railroad Gum,
Tubs,	Sheet Gum,	Water Tanks,	Mattrass Covers,	Hose, all kinds,
Caps,	Tarpaulins,	Army Goods,	Bathing Caps,	Shower Baths,
Pants,	Life Jackets,	Navy Goods,	Baptismal Pants,	Chest Expanders.

Together with *all new applications of the Patent Rubber*, which with Boots and Shoes, Packing, Machine Belting, Suspenders, Gloves and Mittins, Tobacco Wallets, Balls, Baby Jumpers, Elastic Bands, etc., etc., will be sold to the Trade at Factory prices.

*** All orders for special articles to be manufactured, should be accopanied with full descriptions and drawings.

October 20, 1849.

Utica French Burr Mill Stone Manufactory.

THE undersigned, successors to Messrs. M. Hart and Son, in the above establishment, are now prepared to furnish French Burr Mill Stones of best quality and greatly improved workmanship and finish, together with best quality Bolting Cloths, Screen Wire, Hoisting Screws, Lighter Screws, Dansells and Mill Pecks.

Our Mr. Munson who is a practical Miller and Mill Wright, has recently invented and patented a machine on which the Mill Stone, after it is blocked up, is suspended upon its centre, where it is balanced in the course of filling up and finishing, instead of filling up the same without the means of testing the accuracy of its balance, leaving that to be done by the Mill Wright (as is usually the case) in hanging the Stone for actual use in the mill.

In order that the great superiority of Mill Stones finished in this way over all others, may be seen at once, a brief description of the machine and manner of finishing, is herewith given.

An important part of the machine is a heavy circular face plate, which is hung and balanced on a pivot or spindle. This plate has a flange near the outer edge on the under side, which rests on four friction rollers, so that when put in motion it runs perfectly smooth and true, around the opening or eye in the centre of the plate there is raised a flange which receives a hollow cone for forming the eye of the stone. This cone stands perfectly true with the plate, which plate is raised or lowered with a lighter screw. The manner of finishing a stone is by placing it upon the plate and centre it. The skirt is then coated with plaster and turned off perfectly true. The band is then put on hot. This band is wide, (with iron tubes fitted in for the pin holes) and extends above the edge of the stone in its unfinished state, leaving a vacancy between the eye and the band, which is to be filled up in the finishing. It is in this filling up and finishing of the stone that the balancing of it is performed. The means being here afforded as described of raising the stone free from the friction rollers and holding it suspended on the spindle or cock-head, and in that condition observing its balance when at rest or by application of motive power, communicating to the stone a swift motion, and in that condition by observing its balance it can very accurately be ascertained which side of the stone preponderates and where to apply the heaviest filling. This test is strictly observed until the necessary thickness is obtained. When the filling is completed a coat of plaster is put on and the top is nicely turned off, and the stone is complete. During the whole process the means are afforded of testing its balance both at rest and in motion. So that when the process of construction is complete and the mill stone finished, it is not only constructed otherwise favorable to the perfection of the stone, but the stone is also throughly balanced.

All of our stock will be selected and manufactured under the direction and superintendence of our Mr. Munson, which together with his loug experience in the business will be a sufficient guaranty that the high reputation of this establishment will be fully sustained.

Confident that we can offer greater inducements to purchasers of Mill Stones, Bolting Cloths etc., than any other establishment in this country, a share of public patronage is respectfully solicited.

HART & MUNSON,

Utica N. Y. Sep. 1849.

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS

OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

☞ *The above may be had at order at our Car Factory,*

REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
} SPRINGFIELD, MASS.

1y48

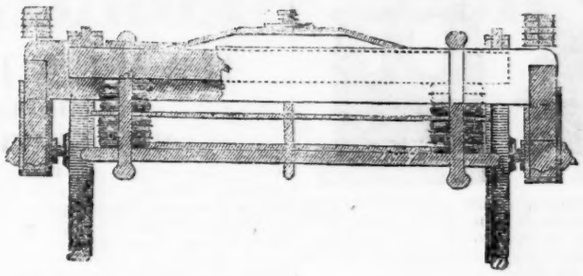
Coal.

CUMBERLAND SEMI-BITUMINOUS COAL superior quality for Locomotives, for sale by

H. B. TEBBETTS,
No. 40 Wall St., New York.

May 12, 1849. 1m19

FULLER'S PATENT
INDIA RUBBER CAR SPRINGS.



RAILROAD COMPANIES are cautioned, before purchasing Springs, to examine the actual patents and judge for themselves.

Persons, under the Title of the New England Car Company, seeking fraudulently to invade Fuller's rights have put forth so many statements for the purpose of misleading the public, that an enumeration of some facts is absolutely necessary, for the purpose of putting persons interested upon their guard.

Fuller's patent is for the application of Discs of India-rubber with Metal Plates, for forming Springs for Railway Cars and Carriages—either one disc and two plates, or ten discs and plates, or any other number, are equally covered by the patent. Fuller is not bound to the use of short discs—he may use long discs and plates.

Ray's patent is simply and wholly the forming of air tight rubber cylinders, with hoops or bands round the outside, and the combination of elasticity of India rubber, with the elasticity of atmospheric air confined in the cylinder, and in no part of his patent is he authorised to use the form of spring which he is now fraudulently supplying to Railroad Companies. Such springs are direct and positive infringements of the very letter of Fuller's patent.

Fuller's patent is dated October, 1845, Ray's patent, August, 1848.

The spring patented by Ray never has been put in operation, and never can be made useful for Railroad cars.

A mere experiment, even if made, it is well known does not prove an invention; and it is ridiculous for such parties to hope to mislead the Presidents and Superintendents of Railroad companies, by claiming the invention because Ray alledges he made an experiment—which Fuller had made before him—had actually brought into working order, and obtained a patent for—and this too before Mr. Ray states he made his experiment—and that experiment not claimed to have been applied to a car or carriage.

Besides, the invention could not have been developed until India rubber, properly Vulcanised, could be made of a sufficient thickness. In the United States the art of vulcanising rubber by steam heat, (by which means only can a body of rubber having any considerable thickness be vulcanised,) was not introduced until after the grant by the American government of the patent for springs to Fuller—whereas the process of vulcanising rubber by steam heat was invented in England about three years previously, and was used by Fuller there. This fact refutes entirely the claim of invention put forth by Mr. Ray, and proves the impossibility of his pretensions being true.

Fuller was the first and only inventor of the spring. A Mr. Dorr, whose connection with Mr. Goodyear is well known in this country, applied in England to Mr. Fuller, after he had published and patented his invention, and introduced another party for the purpose of obtaining the agency for the United States. They were furnished with a complete set of drawings and models, and with instructions to make arrangements for the supply of material of American manufacture—from that hour to the present not a single communication has been received from them. Some of these identical models have been traced into the hands of parties now seeking to invade Fuller's rights, and who have exhibited them as specimens of their own invention.

After this, the conveyance was made by Goodyear to certain parties here for the use for railroad springs of what he calls his Metallic rubber. Comment is unnecessary.

There are 5 or 6 different processes for the manufacture of vulcanised rubber, patented by as many different parties, some here, some in England, either of which would probably make good springs.

A large and powerful company has been organised under Fuller's patent, the particulars of which shall be given very shortly.

An action has been commenced against one railroad company for infringement; and all other parties will assuredly be prosecuted if they continue farther to infringe upon Fuller's patent.

W. C. FULLER,

The only persons authorised to supply the Springs are G. M. KNEVITT, 38 Broadway, N. York, General Agent for the U. S.: and JAS. LEE & Co., 18 India Wharf, Boston. JOHN THORNLEY, Chestnut st., Philad.

TO LOCOMOTIVE AND MARINE ENGINE Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine, and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; hollow Pistons for Pumps of Steam Engines etc. Manufactured and for sale by

MORRIS, TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut streets,
Philadelphia.

The New York Iron Bridge Co.

LATELY KNOWN AS
Rider's Patent Iron Bridge Co.

THE Company which has hitherto furnished these Bridges, under the patent granted to the late Nathaniel Rider, deceased, have become satisfied that all the principles embraced in their construction, are included in a previous patent, granted in the year 1839, to Col. Stephen H. Long, of U. S. Engineers, and by him designated as "Long's Suspension Bridges," and have therefore made an arrangement with Col. Long, by which they have secured the exclusive right to make and vend these Bridges throughout the whole United States.

The only change consequent upon the new arrangement will be found in the name and style of the Company. The parties composing it being the same, the construction of the Bridges will be essentially the same.

August 4th, 1849. M. M. White, Agent,
au7tf No. 74 Broadway, New York.

Steam Boiler Explosions.

THE Subscriber having been appointed sole Agent for Faber's Magnetic Water Gauge, is now ready to supply the trade, and also individuals with this celebrated instrument. Besides the greatest safety from explosion resulting from its use, it is a thorough check against careless stoking and feeding. In marine engines it will regulate the exact quantity required in the "blow off." Pamphlets containing full information, can be had free on application to the Agent,

JOSEPH P. PIRSSON,
Civil Engineer, 5 Wall st.

To the Proprietors of Rolling Mills and Iron Works.

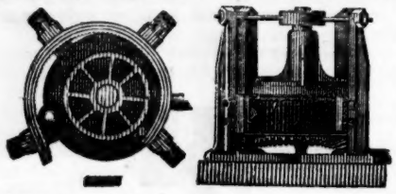
THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of *Rolls* (Rollers), both *chilled* and *dry-sand*, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burtt, J. & J. Rogers, Saltus & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Atwater, etc., etc.

F. & T. TOWNSEND.

Albany, August 18, 1849,

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has give universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammersman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNdersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co.,
March 12, 1848.

ENGINE AND CAR WORKS.

DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

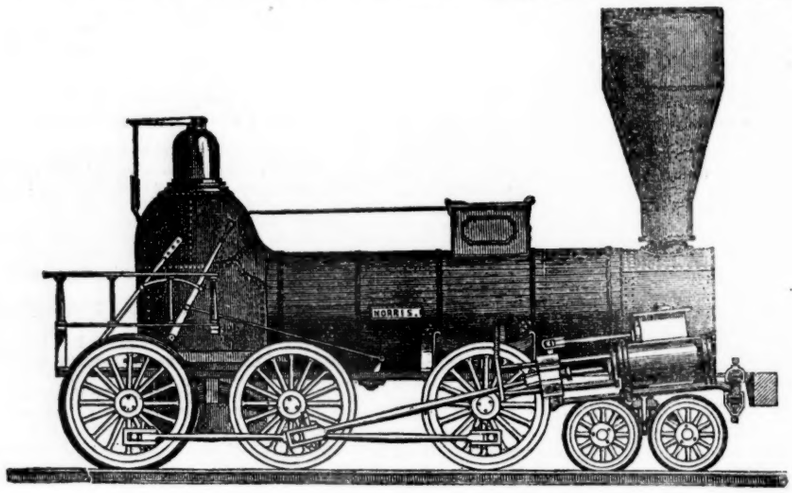
And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds —including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

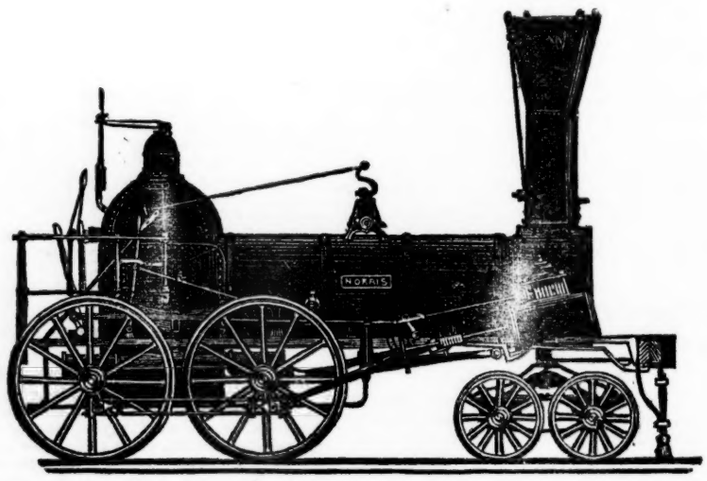
DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS